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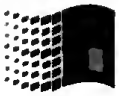
COMPUTERWORLD

SmartSuite ships; lacks 32-bit 1-2-3

By Laura DiDio
and Craig Stedman

Lotus Development Corp., which has been struggling against Microsoft Corp. in the desktop suite market, last week rolled out inducements to lure users to its SmartSuite offering.



Win 95 suites

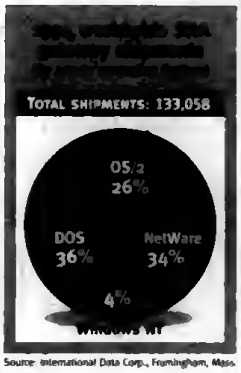
Lotus will ship SmartSuite 96 Edition for Windows 95 this week. It also said users of Novell, Inc.'s WordPerfect suite, PerfectOffice, could switch to SmartSuite for $199 through Dec. 31.

The SmartSuite application set includes the Word Pro word processor, Freelance Graphics, the 1-2-3 spreadsheet, the Approach database, the Organizer personal and group scheduler, and the ScreenCam multimedia tool.

However, the new suite is marred by the lack of 32-bit versions of 1-2-3 and Organizer [CW, Aug 21]. The suite still relies on the Windows 3.1 version of 1-2-3. The 32-bit spreadsheet just started beta testing and isn't expected to ship until at least March.

That doesn't make Lotus look good compared to Microsoft, said Jeffrey Tarter, publisher of "Softletter," a newsletter in Watertown, Mass. Word Pro and the other products Lotus is releasing in 32-bit mode "aren't exactly the most compelling parts of the

SmartSuite, *page 125*



Source: International Data Corp., Framingham, Mass.

Microsoft serves up host link

By Laura DiDio

Microsoft Corp., an underdog in the SNA gateway market, hopes to change that status in the next two months with integrated TCP/IP network support that could make it cheaper and easier for PC users to access IBM hosts across the enterprise.

The software giant in Redmond, Wash., will introduce a service pack release of its SNA Server software. In addition, third-party software vendor Proginet Corp. will introduce Fusion, software designed to provide workstation-to-host communications scalability.

SNA Server is client/server software that Microsoft bundles with its BackOffice suite of integrated server products.

The current version, SNA Server 2.11, began shipping during the summer. It connects PCs to IBM mainframes and AS/400 systems by using Windows NT Server to perform necessary communication handshakes and protocol conversions, which let LAN-based PCs access data on IBM SNA networks.

Vesa Suomalainen, general manager of the SNA Server unit at Microsoft, last week told *Computerworld* that the upcoming Service Pack for SNA Serv-

Microsoft, *page 125*

DBMS fix

Oracle's upcoming suite to centralize, ease remote management of databases

By Dan Richman

Oracle Corp. will announce on Dec. 13 a product suite intended to give organizations an effective way to centrally manage databases running on Intel Corp. machines in hundreds or thousands of small branch offices.

Details were still in flux at Oracle last week. But the Redwood Shores, Calif., vendor said its suite, code-named Bandwagon, will include a modified version of the Oracle7 relational database management system. It will also feature facilities for installing and maintaining applications and data remotely, companywide messaging through a product code-named Pegasus, and World Wide Web access.

The suite was developed to handle the needs of offices that lack database administrators or even moderately technical users.

Analysts briefed on the products and one Oracle user reacted positively to the impending announcement.

"We have 3,100 branch offices in the U.S. and Canada, most staffed with only two people, where the priority is helping people, not running computers," said Rich Malone, chief information officer at Edward D. Jones & Co., a financial broker in St. Louis. "Anything that will make that easier makes lightbulbs go [on] in my head."

Bandwagon has many pieces, but it will be sold as a single, indivisible product. The price hasn't been set. Oracle has promised delivery by May 1 for SunSoft, Inc.'s Solaris for Intel

Bandwagon, *page 16*

Hotels heading for 'net without reservations

By Julia King
and Thomas Hoffman

Forget toll-free 800 numbers and travel agents. More and more hotels are giving travelers Internet-based access to their reservations systems in the name of better customer service.

Also hot in the hotel business these days — and long overdue, according to several analysts — are computerized systems that do everything from tracking guests' pillow preferences to speeding up orders of shampoo and shower caps from hotel suppliers.

"There was a three- or four-year period when technology expenditures were put on the back burner because the hotel industry overall wasn't performing," said Scott Berman, a director at Coopers & Lybrand's

Hotels, *page 28*

"Having an electronic database of all hotels gives us the flexibility to use data and to move it very quickly.... If we see another Web site we want to be on, we can get up and going very quickly."

— Bruce Rosenberg, Hilton Hotels

Centralized vs. Decentralized:

Which IS structure is best?

A central system can slash IS costs 20%

NICK KELSH

CLAUDE MARAIS, ELF ATOCHEM

Disperse IS and make faster, better decisions

ABBY GOODWIN

STUART LIEBERMAN, BELL & HOWELL

See In Depth, page 96

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Inside Computerworld

Nov. 27, 1995

News

4 Desktop ATM . . .
Madge Networks announces products to provide desktop Asynchronous Transfer Mode (ATM) for less than $1,000 per connection.

6 . . . and ATM tools
Network General unveils tools for managing production ATM networks.

8 Unifying RAID
Sterling Software announces software that tracks capacity usage on various vendors' RAID devices — all from one graphical user interface.

10 New Cray models
Cray Research introduces scaled-down air-cooled models of its parallel-processing machine.

12 Random House's new IS chapter
The New York publishing concern has crafted an aggressive technology plan that includes client/server, among other things.

14 Downsizing
The Chicago Board Options Exchange is migrating its mainframe applications to Unix-based servers.

COMPUTER INDUSTRY

32 Sales automation hopes
Aurum Software hopes to take advantage of Dun & Bradstreet's exit from the sales force automation market to become the biggest player.

OPINION

36 Centralize IS
A centralized IS structure makes sense for most environments, Bill Laberis maintains.

37 Windows 95
Critics of Windows 95 say the operating system borrows heavily from DOS, OS/2 and the Macintosh. But buyers don't care, argues Efrem G. Mallach.

37 Objects 101
Michael Cohn tries to explain why object-oriented programmers make big bucks and say "inheritance" a lot.

126 Legacy PC skills
In the next phase of computing, businesses will reorganize themselves around a high-speed broadband network, and some of those recently acquired PC skills will become outmoded, Charles Babcock says.

Re-engineering has left IS staffers *exhausted. In this week's Leadership Series, Robert Zawacki suggests re-energizing employees by focusing on the human side of IS.*
Following page 88

Choice Cuts

There has to be a better way *to find trainers. IS managers such as Xerox's Bob Monastero are finding few options besides word of mouth.*
Management, page 85

Closer Look
WEB BROWSERS

A year ago, *just a handful of Web browsers existed, and most were shareware. Today, more than 20 browsers vie for your attention. Wading through the choices is a big job.*
Enterprise Networking, page 61

Technical Sections

DESKTOP COMPUTING

39 NT boxes
An increasing number of vendors in the high-end PC space are hitching their fortunes to the Microsoft Windows NT bandwagon.

41 Review
Quarterdeck's Winprobe4 can perform encyclopedic analyses and diagnostics on Windows, but it can't fix any problems it finds.

WORKGROUP COMPUTING

51 Using Notes
How the CNL Group, a small Orlando, Fla., investment house, standardized on Notes.

56 Workflow simplified
The Workflow Management Coalition releases its first standard in its quest to make workflow easier to use.

ENTERPRISE NETWORKING

62 The Internet Page
A new system management tool offers a simple way to track Web server availability, and a multilingual authoring program debuts.

68 Using ATM skeletal-ly
Downloading "The Visible Human" illustrates how ATM can be used for everyday use of data-intensive and multimedia applications on networks.

LARGE SYSTEMS

73 IBM software pricing
IBM's recent addition of the DB2 database to its usage-based pricing scheme should entice more users to try out that mainframe pricing plan.

74 Taking reservations
Best Western International rolls out a worldwide integrated reservation system that will deliver more than $50 million in additional reservation revenue yearly.

APPLICATION DEVELOPMENT

79 Gupta users unruffled
Gupta customers remain unshaken that the company has lost its auditor in a dispute over financial statements.

79 Talkback: C++
We asked about C++, and you responded.

Features

MANAGEMENT

85 Tips for finding new trainers

92 Disease management
A health care trend toward prevention pushes hospital chains to integrate their systems.

93 IS superstars' secrets
A SIM/IBM study looks at high-performance IS organizations.

IN DEPTH

96 Should IS be centralized or decentralized?

CAREERS

107 Objects of great desire
Hot in demand and rolling in offers, top object-oriented programmers can make a killing in financial services. But sacrifices must be made.

Etc.

Calendar	92
Company Index	121
Editorial/Letters	36
Inside Lines	126
Nov. 22 Stock Ticker	123
How to contact CW	121

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ATM to the desktop breaks $1,000/seat

Madge Networks' package to deliver 25M bit/sec. speed

By Bob Wallace

In the biggest effort yet to drive ATM to the desktop, Madge Networks, Inc. this week will announce products that will bring the technology to end users for less than $1,000 per connection, *Computerworld* has learned.

Among the first to pledge support for bringing Asynchronous Transfer Mode (ATM) to the desktop at an affordable price, Madge will introduce a complete package — ATM adapters, stackable ATM switches and software — that will deliver 25M bit/sec. of ATM bandwidth. Madge declined to comment.

"This is a watershed event in the evolution of ATM as a desktop technology because it gives users all the pieces they need at a very affordable price," said Daniel Briere, president of TeleChoice, Inc., a Verona, N.J., consultancy. "Although IBM's in this airspace, Madge will do a better job because it's just pushing one speed, not several, like IBM."

To date, 25M bit/sec. ATM products have been offered almost entirely by small vendors and start-ups such as First Virtual Corp., ATML, Inc. and ConnectWare. One analyst who was briefed said those companies don't lend instant credibility to the technology.

Analysts say 25M bit/sec. ATM products stand the best chance of making ATM a reality on the desktop because they are cheaper than 155M bit/sec. models and aren't overkill from a bandwidth perspective.

Today, ATM use is restricted almost entirely to backbone network applications. "But the power of the Madge announcement is that it's from a major networking player and therefore seeds the credibility of ATM at 25M bit/sec. to the desktop in users' minds," the analyst said.

ATM for the masses

Product	Price	Availability
Collage 250/Workgroup ATM Switch	$6,995 (12 ports)	Q1 1996
Collage 280/Workgroup ATM Switch	$7,995 (12 ports)	Q4 1995
Collage 214/Netwnrk Option Module	$995 (155M bit/sec. copper)	Q4 1995 to Q1 1996
Collage 215/Network Option Module	$1,395 (155M bit/sec. fiber)	Q4 1995 to Q1 1996
Collage 218/Stacking Bus Module	$1,195	Q4 1995 to Q1 1996
ATM Adapter Cards	$325 to $430 each	Q4 1995

The lineup

Madge's line of products offers users options:

- The stackable Collage 250 Workgroup ATM Switch, which has 12 25M bit/sec. ATM ports and two slots for high-speed uplinks to servers and/or backbone networks. It costs about $583 per port.
- The new Collage 280 Workgroup ATM Switch, also a 12-port stackable switch, but one that offers flexibility by adapting between switched Ethernet and ATM at 25M bit/sec on every port without user intervention. It costs $600 per port.

The cost per port on the switch plus the cost of Madge's 25M bit/sec ATM adapters ($325 to $430) total less than $1,000 per connection.

Madge's stackable approach makes the technology even more attractive as users pay as they grow rather than buying into an expensive chassis-based system with a relatively fixed configuration.

To stack the switches, users need only equip one of the two option slots in each box with a 218 Stacking Bus Module.

Both of the workgroup switches were made possible through technology developed by ATM start-up WhiteTree Technologies, Inc.

Better network management tools appear See page 68.

Alantec to slash prices, unveil Ethernet switch

By Bob Wallace

LAN switching pioneer Alantec Corp. is expected next week to introduce a 10/100 Ethernet switch and announce deep discounts on an Ethernet switching system it rolled out earlier this year, *Computerworld* has learned.

The new Alantec switch, called the PowerHub 4100, will provide a dedicated 10M bit/sec. of bandwidth through some ports and a dedicated 100M bit/sec. of bandwidth through the rest. It joins similar products already on the market from Bay Networks, Inc. and Cisco Systems, Inc.

LAN switching

This means information systems managers can lay the foundation for heavy-duty client/server computing by attaching small groups of power-user clients to the switched 10M bit/sec. ports while giving the switched 100M bit/sec. "fat pipes" to heavily used servers.

The downside is that these switches provide far greater bandwidth than is available today from shared-capacity Ethernet and Token Ring LANs. They aren't a panacea for network managers sizing up bandwidth-hungry applications.

The PowerHub 4100 can be configured to support four switched Ethernet ports and six 100M bit/sec. Fast Ethernet ports at a total system cost of roughly $3,300, an Alantec spokeswoman said.

"That pricing sounds good because Alantec has had a history of being high on per-port price," said Mike Connell, a chief engineer at Crawford Communications in Atlanta, an Alantec user. "I'm interested in a 10/100 switch and would like to hear more about the product."

Analysts hailed word of the new system.

"This will be a great switch for [Alantec] because it fills a major hole in their product line," said Charlie Robbins, president of Aberdeen Group, Inc., a Boston consultancy. "They needed a 10/100 product to go up against Bay Networks and Cisco, which filled that void in their line by buying Grand Junction in September. I expect it will have ATM and FDDI uplinks, too."

The 100M bit/sec. ports on the versatile Alantec switch can support ordinary twisted-pair wiring or fiber-optic cable. It will be offered in six fixed configurations, the spokeswoman said.

Alantec is also expected to slash prices on its PowerHub 4000 Ethernet switch, which was designed primarily for workgroup settings, by well over 20%, she said.

Announced in June, the PowerHub 4000 provides 12 switched Ethernet ports and either two switched 100M bit/sec. pipes or one 100M bit/sec. Fiber Distributed Data Interface (FDDI) uplink. It can support up to 8,000 media access control addresses and boasts a forwarding rate of about 95,000 packets per second. The Alantec switch began shipping in the summer.

Analysts had called the switch's original price — more than $500 per port — way too high. "They have to be this aggressive to move strongly into 1996," Robbins said.

Corrections

Due to a production error, the caption that went with the Comdex photo on the table of contents in the Nov. 20 issue was cut off. It should have ended: "To get the lowdown on show highlights, see pages 14, 15 and 16."

****

"Lockheed Martin outpaces IS cuts" [CW, Nov. 13] incorrectly reported plans for layoffs at the company. Lockheed Martin started this year with 5,500 IS employees and plans to cut about a quarter of that staff, as was correctly reported in the story but incorrectly listed in an accompanying chart. The company plans to lay off about 19,000 employees through next year.

****

Due to a reporting error, "Digital brings reliable WAN routing to NT" [CW, Nov. 13] misstated the number of organizations using Digital Equipment Corp.'s Reliability Transaction Router middleware.

There are between 50 and 100 organizations using the middleware, each typically with hundreds of end users, according to Digital.

****

Due to an editing error, a chart on page 61 of the Oct. 30 issue misstated a company and product name. Lightship is a suite of OLAP products from Pilot Software, Inc., a Duo & Bradstreet company in Cambridge, Mass.

****

A chart on page 59 in the Oct. 9 issue should have indicated that Network Computing Devices, Inc.'s NTrigue software for accessing Windows servers was co-developed with Insignia Solutions, Inc.

****

"IS managers eye video server pros, cons" [CW, Oct. 16] should have included the information that IBM's StarWorks software for AIX is based on Starlight Networks, Inc.'s StarWorks multimedia software.

****

Due to a reporting error, "IBM claims PowerPC 620 on track" [CW, Oct. 16] said IBM is the only major vendor without a 64-bit platform because it hasn't shipped its 64-bit PowerPC 620 chip.

However, IBM also has the PowerPC AS, a 64-bit chip set of seven microprocessors that is used only for the IBM AS/400 computer series.

****

The Corporate Technical Directory, 10th Edition, is put out by Corptech at (800) 333-8036. Its source was incorrectly reported recently [CW, Nov. 6].

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Sniffer takes on ATM net management

Tool abets move away from legacy LANs

By Bob Wallace

Network General Corp. is expected next week to address the dearth of ATM network management wares with a performance monitoring system designed to manage production Asynchronous Transfer Mode (ATM) networks, *Computerworld* has learned.

The Menlo Park, Calif.-based vendor's ATM Sniffer Network Analyzer was designed to help accelerate migration of mission-critical applications from legacy LANs to ATM LANs by providing previously scarce performance management capabilities.

Users are clamoring for ATM management tools because ATM networks are far more difficult to monitor and manage than the slower networks used today.

ATM networks can support anywhere from dozens to hundreds of traffic routes — akin to lanes on a superhighway — through a single ATM permanent virtual circuit between two ATM switches.

The package can help users manage switched virtual circuits, which are set up only when there is traffic to be sent. It also helps network managers quickly identify on which superhighway LAN an accident has occurred.

The ATM Sniffer rollout comes months after Hewlett-Packard Co. entered the fertile market with an ATM analyzer package.

Faster process

Once a full line of ATM network management packages exists, users will feel far more at ease about moving key applications from existing legacy LANs to the much faster networks based on ATM switching, according to John Morency, a principal at The Registry, Inc., a Stratham, N.H., consultancy.

Network General officials said the ATM Sniffer can spot problems on all seven layers of the Open Systems Interconnection (OSI) model as they pertain to traffic over point-to-point ATM connections.

Performance monitoring

The performance monitoring and management packages comprise several key components (see chart).

One early ATM adopter said flexible ATM performance management packages are critical to ATM's success.

"Users absolutely have to have products like the ATM Sniffer before they move to the technology," said Chuck Rush, global networking manager at McDonald's Corp. in Oakbrook, Ill.

"This product captures and decodes packets like we do in debugging [older] networks now," Rush said. This means users won't need to learn any radically new network management skills.

Better network management tools appear. See page 68.

The scent of a network

The ATM Sniffer Network Analyzer, available next month, is made up of the following pieces:

Components	Price
Software, ATM interface, monitoring and analysis applications	$27,000
Traffic-generation application	$3,000
The portable Dolsch Pentium computer	$10,000*
T3, E3 and Optical Carrier 3 (OC3) interfaces**	$9,500
Total	**$49,500** (Approximate)

*If bought from Network General. It will be cheaper if bought directly from Dolsch.
**T3 = 45M bits/sec., E3 = 34M bits/sec. (the European version of T3) and OC3 = 155M bits/sec.

Source: Network General Corp., Menlo Park, Calif.

Sniffing out the process

This is how Network General's ATM Sniffer Network Analyzer works:

- A network manager connects the point-to-point ATM connection to the ATM Sniffer, which is a portable 100-MHz Pentium-based computer with an interface card and a special software application that generates traffic across the line.
- The system's Discover Mode capability discovers and logs all connections across the link in seconds. The system then tests the connections to find the problem on the link.
- If the ATM Sniffer doesn't find a problem at the ATM layer, the system can work its way up the OSI layers until the cause of the problem is located. This is displayed using the same graphical interface as previous Sniffer packages. — *Bob Wallace*

'Free mail' on the 'net forces users to trade off privacy

By Suruchi Mohan

The new year will herald a trend of offering free mail on the internet that may force on-line service providers to change the way they conduct business.

It also may be the harbinger of a new crop of free services and other offerings that will come at the expense of users' privacy, some observers said.

In January, FreeMark Communications, Inc. in Cambridge, Mass., and Juno Online Services, Inc. in New York will begin shipping their respective electronic-mail products, which give users free access to the Internet.

The trade-off is that users must accept advertisements that come embedded in their mail — akin to reading their mail under an advertiser's masthead. But users also must complete an elaborate questionnaire about themselves, including details such as their hobbies and magazine preferences.

"This is the beginning of a trend," said Rochelle Theophano, a senior analyst at Datapro Information Services Group in Delran, N.J. "Advertising will be the moneymaking application on the Internet."

FreeMark and Juno will act as service providers for users who want to use the Internet for mail. The personal information they gather about their customers will go into company databases, making it easier to target advertising at select groups.

Yet both companies insist this information won't be made available to advertisers. Instead advertisers will receive demographic information about the companies' reader base.

Advertisers are aware of this. Dave Martella, manager of new ventures group at Radio Shack in Fort Worth, Texas, said all his company wanted was demographic information. "I'll never know who does what individually," he said, adding that he didn't really need that kind of information.

Both companies are beta-testing the software, which analysts predict will hasten the commercialization of the Internet.

The idea is so simple that Janis Annunziata, a home beta-tester and project leader at GE Capital Corp. in Stamford, Conn., wondered why no one had thought of it before.

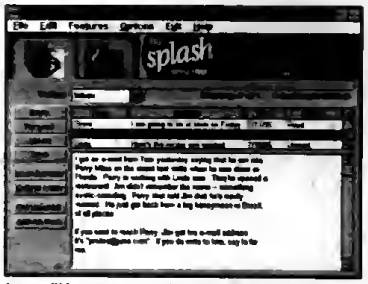
"I don't care about information in the database," Annunziata said. "I don't have a problem" with it.

Yet Mary J. Culnan, an associate professor at Georgetown School of Business in Washington, said several companies are maintaining dossiers and aren't open about them.

"This is open. If you disclose information of your own free will, there is no privacy problem," she said.

"If the company changes its mind and doesn't inform people, it is a privacy issue."

Michael Knoll, a professor at the Annenberg School of Communication at the University of Southern California at Los Angeles, said, "Promises are meaningless in this day and age. Even if they promise, the temptation is too great [for whoever has the database]. What happens if somebody breaks in to the computer system?"



Juno will become *a service provider for those who want to use the Internet for mail*

So far, beta-testers don't seem too concerned about giving out personal information to the companies.

"The ads can be intrusive, but they are also beneficial in terms of getting information on subjects you're interested in," said Pradeep Behl, a home beta-tester at Banyan Systems, Inc. in Westboro, Mass.

When users receive mail, they see an ad on the screen. This is where FreeMark and Juno differ.

FreeMark presents the message to users as an envelope with a digital stamp bearing the advertiser's logo.

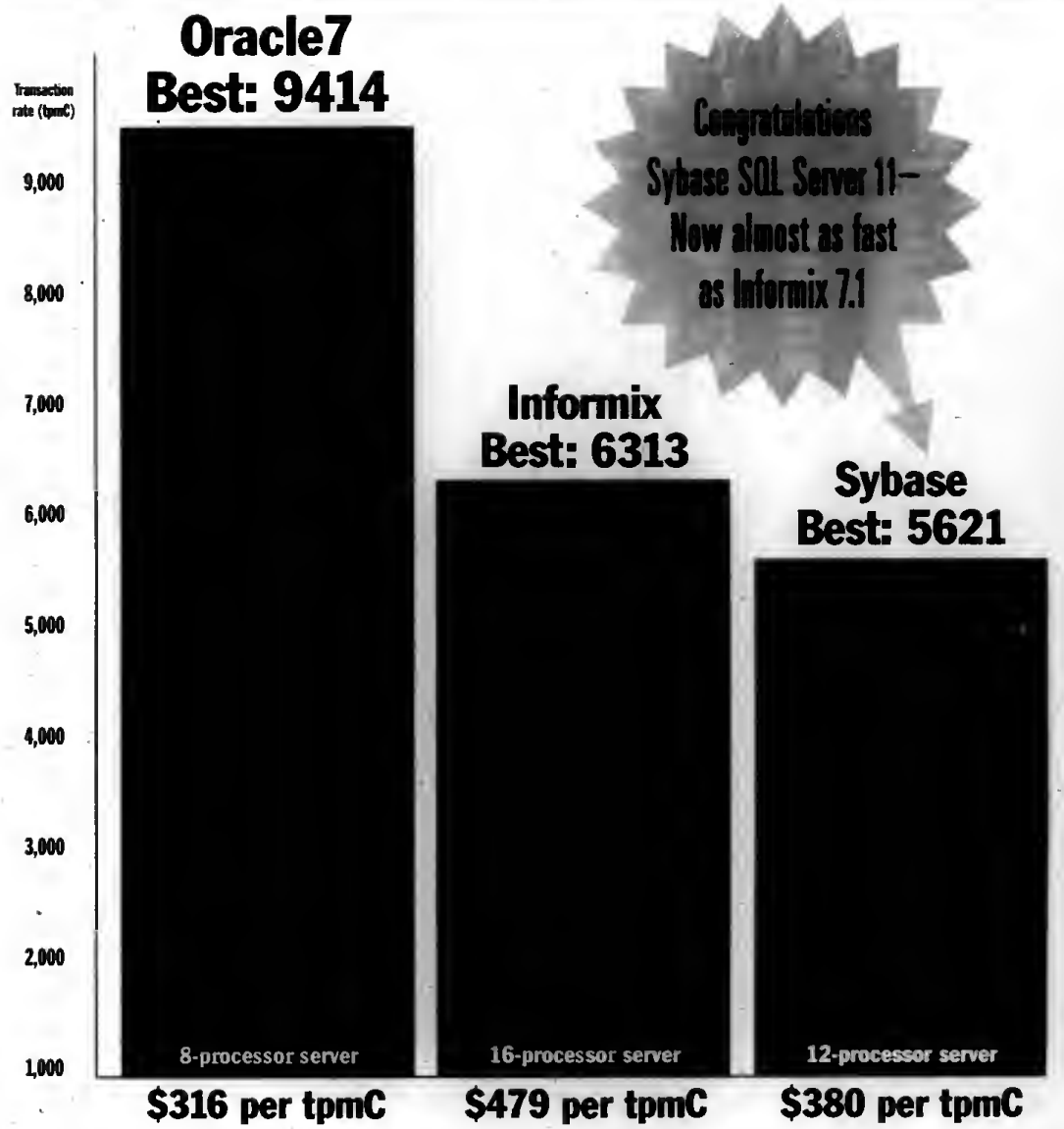
When users open the envelope, they see the message and the ad displayed in a horizontal bar at the bottom of the screen.

If they want further information or, in some cases, a coupon, they simply click on the bar.

Juno presents its ads in the form of a revolving billboard in the upper right corner of the screen. For more information, users click on the banner.

E-mail access for all isn't far off. See News Shorts page 8.

Oracle7: Faster, Cheaper, Better



The TPC-C is the industry standard test for measuring database transaction processing performance and price/performance. Oracle7's best TPC-C result is 60% faster than Sybase's best result. What is more amazing, Sybase used its yet to be released Sybase SQL Server 11 database and 50% more processors to achieve roughly half of Oracle7's performance. Informix used twice as many processors as Oracle and delivered 32% less performance. And the Oracle7 system costs much less than either Sybase or Informix. Think about it. Then call Oracle 1-800-633-1071, ext. 8107.

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Oracle Digital AlphaServer 8400, $316/tpmC, Informix SGI Challenge XL, $479/tpmC, Sybase HP 9000 T500, $380/tpmC.

Sterling unifies RAID tracking

By Craig Stedman

Bridging a management gap that separates various mainframe disk arrays, Sterling Software, Inc. this week will introduce a unified environment that tracks capacity utilization on multiple RAID boxes from a single graphical user interface.

Traditional nonredundant mainframe disk subsystems such as IBM 3390-class devices didn't require users to learn multiple management approaches since everything plugged in to IBM's storage controllers. But with RAID technology, each vendor uses its own controller with unique characteristics. "There's no consistency now," said Carl Greiner, an analyst at Meta Group, Inc. in Stamford, Conn.

Hidden differences

Sterling's multivendor RAID reporting software won't eliminate the management differences, but it was designed to mask them behind a common look and feel running on one console. Shipment is slated for January, which should make Sterling the first to release such a product, Greiner said.

System/390 users said the multivendor flexibility promised by Sterling could make life easier for storage managers and cut training costs in data centers that have mixed disk farms.

"There's always a chance that we'll buy [different arrays]. We really don't want to have to install multiple management products to control them separately," said Bob Jemian, technical support manager at SunGard Business Systems, Inc. The developer of financial applications plans in early December to start beta-testing Sterling's RAID-enabled SAMS:Vantage software with Storage Technology Corp.'s Iceberg array, Jemian said.

The all-in-one tracking capabilities may "let a lesser-trained person manage more of your products," said Tom Birk, operations manager at the Environmental Protection Agency's data center in Raleigh, N.C. But Sterling "has to really do their testing to be sure the software is absolutely safe" across different arrays, he added.

RAID tracking will be added to Sterling's SAMS:Vantage product to monitor use of old-style mainframe disks. Sterling is supporting RAID boxes from IBM, StorageTek and EMC Corp. It plans next summer to add arrays from Hitachi Data Systems Corp. and Amdahl Corp.

This first pass at RAID includes only "minimal" features for automating the monitoring of disk arrays for problems and then kicking off remedial actions, according to John Maxwell, product marketing manager at Sterling's storage unit.

Sterling is building device-specific code into SAMS:Vantage to accommodate the idiosyncrasies of the different RAID arrays, Maxwell said. But the common graphical interface will let users keep tabs on different devices without having to move between screens or tools, he added.

The Sterling product also will provide real-time views of capacity usage in an array. That is particularly important with iceberg, which relies on data compression to turn a relatively small amount of disk space into a much larger logical capacity. StorageTek's own usage tracking tool is character-based and oriented more toward batch-style reporting, users said.

"We tend to push things, and we probably could squeeze more out of a box if we had real-time information," said Nick Varvarigos, a managing consultant at Bell Sygma, Inc., the information systems and outsourcing arm of Bell Canada, Inc. located in Toronto.

Store this

SAMS:Vantage provides the following storage management functions for EMC, IBM and StorageTek disk arrays

Reporting
- Provides real-time views of capacity utilization
- Tracks multiple levels, from an entire array to individual volumes

Command generation
- Lets users handle storage management tasks on-line
- Supports disk reservation and release on all arrays

Automation
- Monitors disks and data paths for problems
- Provides alerts when usage thresholds are exceeded (StorageTek's Iceberg only)

News Shorts

IBM PC Co. taps Santelli

Anthony Santelli was named general manager of the IBM PC Co. He replaces Bruce Claflin, who resigned from IBM earlier this month to take a job directing Digital Equipment Corp.'s PC fortunes. Prior to his new role, Santelli was general manager of IBM's Power Personal Systems division.

Airline fined for Web ads

In the rush to the Web, many pioneers can end up getting burned. Last week the U.S. Department of Transportation fined **Virgin Atlantic Airways** $14,000 for false advertising on its Web home page. The U.K.-based airline did not include taxes in its advertised sales fares, and one Newark, N.J.-to-London flight was no longer available. A spokesman for Virgin admitted that its marketing firm was inexperienced with U.S. federal regulations and that ads failed to go through a legal review before they were placed on the Web.

Dataquest drops Win 95 figures

Dataquest, Inc. has reduced its 1995 sales prediction for **Microsoft Corp.**'s Windows 95 from 20 million to 16.4 million units. Dataquest said it expects lower Christmas sales than it anticipated. A survey of 1,200 U.S. households with PCs showed that 6% have Windows 95, according to the consumer research firm Odyssey.

Who's afraid of the year 2000?

Peritus Software Services, Inc. in Billerica, Mass., has teamed with **Vital Computer Services International, Inc.** in New York to provide year 2000 software enhancement services using Peritus' automated software maintenance technologies. Year 2000 software compatibility problems are expected to occur when computer programs encounter the date 01/01/00. Many applications will interpret this as the first day of 1900, not 2000.

Osmos changes object universe

Unisys Corp. will announce tomorrow Osmos, an object database management system designed to support transaction-intensive applications. The Blue Bell, Pa., vendor said the Unix-based object DBMS is capable of handling a large number of small objects, unlike most object DBMSs, which handle a small number of large objects.

Borland Chairman Kahn resigns

Borland International, Inc. founder Philippe Kahn will step down as chairman of the board on Jan. 1, citing as his reason the full-time commitment needed by his start-up, Starfish Software. Starfish Software claims a base of more than 1 million users for its first product, a personal information manager.

Platinum buys again

Platinum Technology, Inc. continues to swallow up small software vendors as it moves beyond its mainframe database utilities niche. The Oakbrook Terrace, Ill., firm's latest acquisitions were ProtoSoft, Inc. in Houston and Softool Corp. in Santa Barbara, Calif. Both make application development tools.

E-mail for everyone

Politicians used to promise a chicken in every pot. Now, they may promise an E-mail address for every home. **Rand Corp.**, a think tank in Santa Monica, Calif., last week published a study calling for universal access to electronic mail for every U.S. resident. It said the decade-long effort, which may cost taxpayers $1 billion to subsidize E-mail service for low-income residents, is needed to address the problem of "information haves and have-nots." The benefits of universal E-mail might include the creation of new "virtual communities," more electronic commerce and a sharp reduction in paper mail, according to the study.

HP tops $30 billion in sales

Hewlett-Packard Co. finished out its fiscal year, ended Oct. 31, with $31.5 billion in revenue — including $678 million in profits on $9 billion in revenue for the last quarter alone. Annual revenue grew 26% over last year's figures, and annual profits were up 52% to $2.4 billion, HP said. Driving growth at the Palo Alto, Calif., firm were PCs, Unix and PC servers, the OpenView network manager and printers.

Proteon debuts network software

Proteon, Inc. last week announced OpenRoute 2.0, a new release of its internetworking software package that supports integrated Services Digital Network, WAN ReRoute and enhancements to Data Link Switching (DLSw). DLSw is an industry standard method for transmitting SNA and NetBIOS traffic across TCP/IP wide-area networks. OpenRoute 2.0 is available now free to Proteon users under software maintenance agreements.

Teledesic gains spectrum slice

Teledesic Corp., a Kirkland Wash., company that plans to build a satellite-based global two-way voice, video and data services network, got a boost last week when the World Radio Conference in Geneva gave it a slice of satellite spectrum. The conference identified 500 MHz for nongeostationary fixed satellite service, which would accommodate the Teledesic system. Teledesic is a telecommunications company backed in part by Microsoft Corp. Chief Executive Officer Bill Gates.

IBM, Ericsson team up

Late last week, **IBM** announced it will team with **Ericsson, Inc.** to build a sprawling network for Meganet GmbH in Cologne, Germany. The deal could mean $500 million in equipment and systems revenue for IBM. The network will use Asynchronous Transfer Mode and voice processing technologies from the duo. Meganet plans to eventually use the network to provide a variety of innovative voice and data services to businesses.

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Cray scales down price on new MPP box

By Craig Stedman

Cray Research, Inc. will introduce this week a second generation of its massively parallel processor (MPP) with new scaled-down and air-cooled models aimed at moving the machine beyond the rarefied realm of academic and government number crunching.

The air-cooled versions of the new T3E start at less than $1 million, one-third the base price of its liquid-cooled-only T3D predecessor. The move to get smaller is aimed at making the parallel processor more affordable for mainstream technical computing, a market Cray needs to tap in to with greater vigor now that government-funded research labs aren't buying as many supercomputers.

The T3E is also a stand-alone system, while Cray's first foray into parallel processing had to attach to one of its traditional supercomputers. The original T3D "was really a high-performance accelerator" that could be used only by Cray's installed base, said Rich Partridge, an analyst at D. H. Brown & Associates, Inc., a consultancy in Port Chester, N.Y.

Phillips Petroleum Co. in Bartlesville, Okla., is part of that base. It runs a 128-processor T3D linked with three Cray supercomputers to study an underwater oil field in the Gulf of Mexico. But the T3E's lower cost may make it feasible to put smaller models of the parallel system in field locations where the company's scientists and geologists are based, said Mark McElroy, manager of exploration and production research and technology at Phillips.

"As the cost comes down, we can think about the possibility of letting the people down there [near the oil field] do some of the work we've traditionally done up here," McElroy said.

Despite the T3D's limitations, Cray quickly took over the market share lead for technical parallel processors in 1994, said Chris Willard, an analyst at International Data Corp. in Framingham, Mass. However, the T3D couldn't match the likes of IBM's RS/6000 SP in the more workaday parts of the technical market. "People there don't buy liquid-cooled stuff," Willard said.

To make the parallel machine more scalable both upward and downward, Cray rewrote its Unicos operating system to include a microkernel with some local processing capabilities at each node. That also lets the T3E run multiple applications on different processors at the same time instead of always having to operate in parallel mode, Cray officials said.

Scheduled to ship in the first half of next year, the T3E should be three to four times faster than the T3D because it uses a more powerful version of Digital Equipment Corp.'s Alpha microprocessor. It also includes a 1.2G byte/sec. I/O and networking channel that Cray later plans to implement on its supercomputers and its SPARC-based CS6400 Unix business server.

Parallel sprawl

The details of Cray Research's T3E parallel processor

	Air-cooled models	Liquid-cooled models
Processors	16 to 128	64 to 2,048
Memory capacity per processor	64M to 2G bytes	64M to 2G bytes
I/O bandwidth	2G to 16G byte/sec.	4G to 128G byte/sec.
Peak performance	76.8 GFLOPS	1.2 TFLOPS
Sample list price	$1 million (with 16 processors)	$39.7 million (with 1,024 processors)

Sun's new Solaris release fixes some problems. See page 51.

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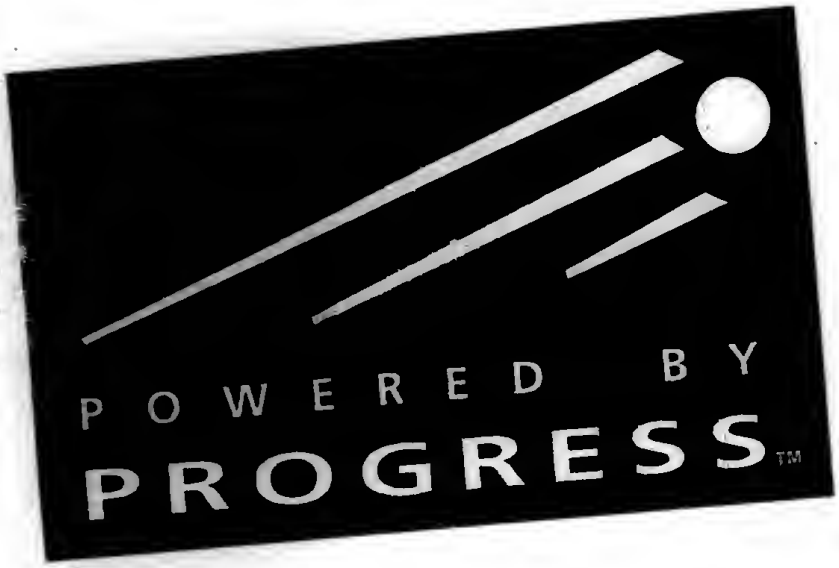

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Random House's novel idea

Publisher hopes top-down automation is its next best seller

By Mitch Wagner

OK, so here's an idea for the blockbuster romance novel of the Christmas season. A leading company in a very conservative, tweed and elbow patches kind of industry already has plenty of respect and financial success but fears it may be living in the past.

So the firm looks to a marriage with a hot, young technology to give it new passion and hope for tomorrow.

Enter Random House, Inc., which plans to implement client/server technology in an industry where things are still done, to a great degree, in the same way as when Huck and Jim first rafted down the Mississippi.

The New York publisher is crafting an aggressive automation plan to be implemented in the next one to three years. The plan includes automating core editorial functions, updating business systems to client/server technology (see related story below right) and integrating support for the company's CD-ROM and on-line efforts with its traditional book product line.

Davis Bancroft

"A main thrust of what we're doing is to find out how the traditional work that we've done is going to change," said James Milde, senior vice president of operations and administration at Random House. "Also, a lot of the product that we sell is changing, what with the emergence of new media and the Internet."

Paper and pen

The central task of publishing, editing and designing books is still largely done by hand. Many of the more than 1,500 books that Random House published last year were delivered to the publisher on paper, edited using pen and paper and keyboarded into typesetting systems. Artwork was laid out primarily using Adobe Systems, Inc.'s Photoshop, and then, in many cases, delivered on disk to printers, Milde said.

Despite the current growing popularity of videos, CD-ROMs and on-line systems, total spending on books is increasing

Source: Veronis, Suhler & Associates, New York

Random House is fairly typical of the publishing industry, said Peter Dyson, an analyst at Seybold Publications, Inc., a publishing industry consultancy in Media, Pa. A book publisher such as Random House contracts out most editing, printing, prepress production and artwork.

"They don't do much themselves aside from acquire titles and then market and distribute them," Dyson said.

But with an eye toward broadening the role of information systems, Random House recently hired its first chief information officer, John Buese, who worked in IS at American Cyanamid Co. American Home Products for 13 years.

At Random House, Buese will head a 150-person staff, overseeing IS support for editorial systems, business and new media. He replaces Richard Blosveren, vice president of IS for the past 35 years, who will retire early next year. No decision has been made yet on whether to reorganize the IS department or change staffing, Milde said.

The company hopes to install a unified editorial system so authors can deliver their manuscripts electronically, Milde said. The book would be edited, formatted, placed with artwork and sent to the printer — all electronically. The company also would like to maintain a database of artwork so it can be reused for book covers and advertising collateral.

Random House already uses limited automation with some manuscripts. *My American Journey* by Colin Powell was submitted to Random House on disk and edited electronically.

In its new media unit, Random House has a partnership with Broderbund Software, Inc. to produce CD-ROMs. It also holds equity in other CD-ROM publishers.

Aetna's new head of IS hopes to automate claims adjusting. See page 74.

HP high on NT Workstation

Replaces DOS, Windows as system of choice for high-end apps

By Mitch Wagner

Hewlett-Packard Co. expects over the next three years to install about 40,000 copies of Microsoft Corp.'s Windows NT Workstation internally, replacing existing installations of Windows 3.1x and DOS for high-end applications, *Computerworld* has learned.

The company also plans to upgrade 10,000 notebooks to Microsoft's Windows 95.

"As we deploy more and more mission-critical systems, we want to make sure we have the most reliable and robust systems environment available," said Bob Walker, vice president of information systems and chief information officer at HP. "Moving from DOS/Windows to NT will be an important step in that direction."

HP's IS department recently recommended to the company's 100,000 users that NT Workstation should be the system of choice for upgrading the company's 80,000 PCs that run Windows 3.1x and DOS, Walker said. HP expects about 40,000 users to take IS up on the recommendation.

The company selected NT Workstation for its robustness and manageability, Walker said. It will be used in mission-critical applications, including sales-order processing, manufacturing and administrative functions. Windows 95, with a smaller memory footprint and power-conservation features, will be recommended for notebook software upgrades.

PC operating systems

Open Windows

Internally, the vendor uses the following:

- 80,000 desktop PCs currently run Windows.
- 40,000 are expected to upgrade to Windows NT Workstation through 1998.
- 10,000 notebook computers will be eligible to upgrade to Windows 95.

The deal won't affect about 20,000 internal HP users who run the company's HP-UX Unix software on workstations, primarily in engineering functions, customer support, responding to on-line customer inquiries and for some order processing. Walker said. "Typically, we use HP-UX where we want real high response for multiple sessions at the same time or hooked up to legacy systems," Walker said.

Not surprisingly, HP's arrangement with its internal users reflects what it is telling the outside world. The company sells and supports HP-UX for servers and workstations and Windows on lower-end desktop systems and servers.

"They're taking a dual stream," said HP-UX user Kevin Wong, a network systems engineer at East Bay Municipal Utility District in Oakland, Calif. "Their PC division is pushing NT and Novell and Unix and whatever the market wants."

Taking a page from client/server

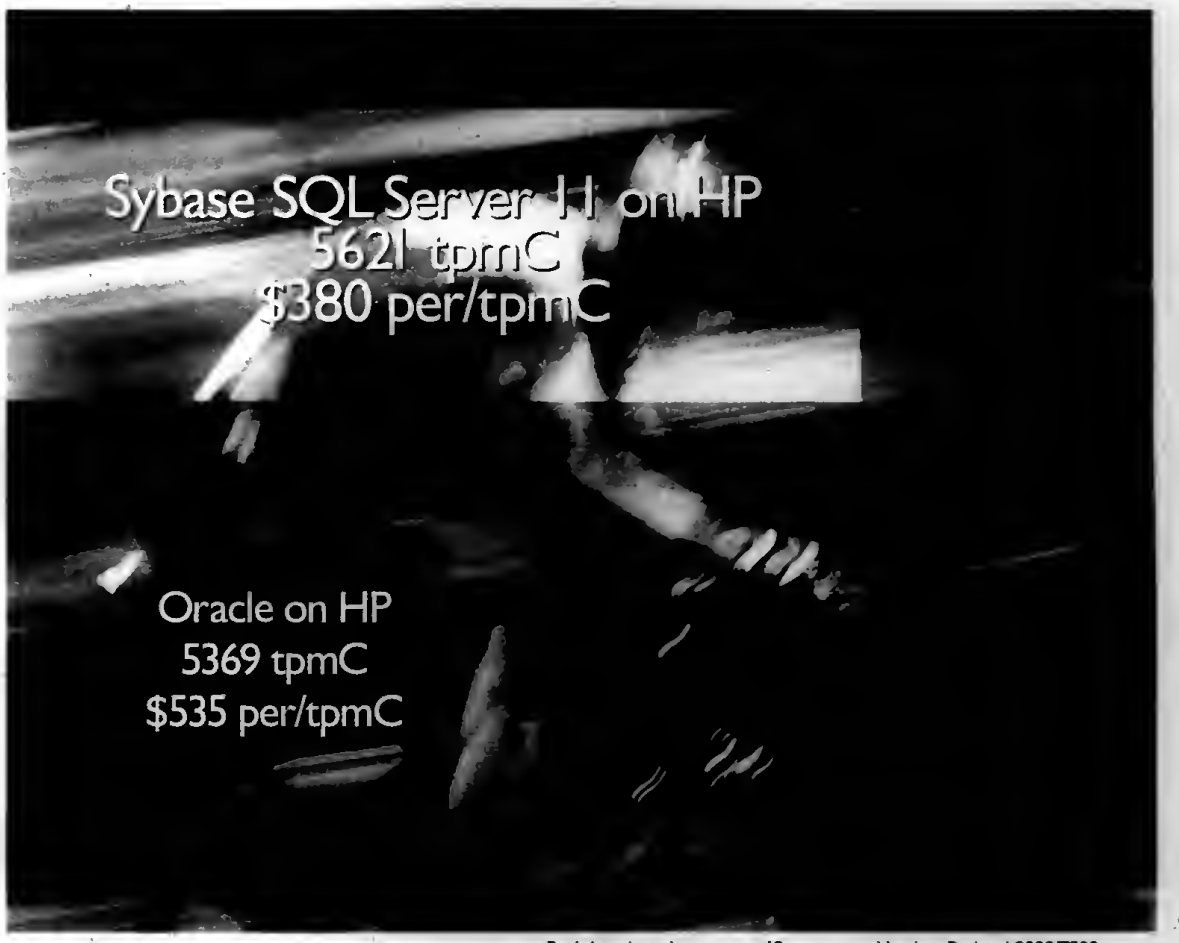
A major part of upgrading Random House's information technology will be migrating to client/server systems for business support.

The company performs its order entry, billing and other general accounting functions on an IBM 3090 mainframe that runs flat-file data stores and programs written in assembler, said James Milde, senior vice president of operations and administration.

Random House already has client/server technology installed in some departments. Sales and marketing information is automated using an Informix Corp. database. Random House uses Notes for communication and publicity coordination with marketing staff and customers, which may include bookstores and mass merchandisers.

Michael Mellon, former head of reference and new media at Random House, said the IS staff delivered regular updates of sales information when he worked at the company two years ago. The updates were broken down by region and customer. Mellon is president and chief executive officer at Hands-On Technology, Inc., a business multimedia publisher in Burlingame, Calif.

—Mitch Wagner



Both benchmarks run on a 12-processor Hewlett-Packard 9000 T500 server.

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Chicago Exchange to trade mainframe for RS/6000s

By Jean S. Bozman

Chicago Board Options Exchange information systems executives last week said they will purchase more than 60 IBM RS/6000 servers as part of a five-year plan to migrate transaction applications from the exchange's Amdahl Corp. 5995 mainframes.

CIO Gerry O'Connell: *As trading volume grows, distributed applications should handle it*

The exchange recently signed a contract with IBM for an undisclosed amount.

A Unix pilot system was set up this summer at one of the exchange's eight trading posts. The other posts will be outfitted with RS/6000s during the next six months, beginning next month. By 1999, all mainframe applications will run on the Unix machines, IS executives said.

First step

The RS/6000s at first will host trading applications and deliver market data to more than 1,200 X Window System terminal displays on the trading floor. Over time, the mainframe's assembler-based TPF (IBM's Transaction Processing Facility operating system) applications will be rewritten to run on IBM's AIX Unix operating system and Oracle Corp. databases.

If the 1999 migration ends without a hitch, it could prompt the retirement of the aging TPF systems used by stock exchanges, airlines and hotel reservation systems, said Bill Moran, a research analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y. "If you could move all the applications to Unix, that would be a breakthrough," he said.

The rack-mounted and desktop RS/6000s will be compatible with 170 handheld RS/6000 devices that are used on the trading floor to take orders.

A big Amdahl mainframe can handle up to 1,100 transaction messages per second, and trading volumes are expected to grow. "That's on one machine that handles the whole trading floor," said Gerry O'Connell, chief information officer at the exchange. "In the future, we're going to divide that into eight. Even with the lower message rates, we think we'll be OK with distributed applications based on the RS/6000s."

But the switch will be more gradual than revolutionary, said Curt Schumacher, vice president of systems operations. "In January, the RISC processors will still act as application servers, and the big server will still be the mainframe," he said.

Meanwhile, an IS staff of 170 — 90 of them programmers — will rewrite custom applications that track orders and traders' market positions. That task will take three to five years.

Follow the leader

John Logan, executive vice president at Aberdeen Group, Inc. in Boston, said he expects more financial exchanges to follow suit as IBM-compatible mainframes evolve into CMOS-based massively parallel processors.

"As long as you have to rewrite the application code to get the power of the mainframe, why not move it over to distributed Unix servers where you can add power incrementally?" Logan asked.

Even exchange?

The Chicago Board Options Exchange trades contracts that are based on sales of stock shares. The exchange will revamp its mainframe architecture and migrate from back-room mainframe computers to Unix systems that sit on the 45,000-square foot trading floor.

Action sues Novell for patent violation

GroupWise at center of allegations

By Tim Ouellette

Action speaks louder than words.

Workflow vendor Action Technologies, Inc. has filed a lawsuit against Novell, Inc., alleging that Novell's GroupWise messaging software copies an Action software patent for managing tasks and scheduling.

Workflow software

Workflow software routes and manages work items in a company and provides users with information on the status of active and completed work items.

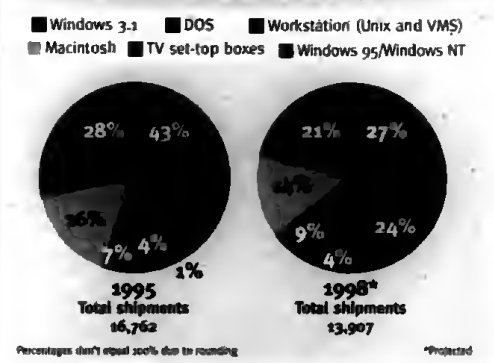
Ed Jameson, chief financial officer at Action Technologies in Alameda, Calif., said the company had pursued talks with Novell since late last year regarding the issue. Since the talks were fruitless, the firm decided to file a lawsuit to defend its patent, he said.

A Novell spokesperson said Action's patent is invalid. Even if it was valid, Novell doesn't infringe upon it, the spokesperson said. Novell officials said the lawsuit won't affect "current and future GroupWise implementations," including its next-generation GroupWise XTD.

Officials also said the lawsuit won't affect Novell's workflow development agreement with FileNet Corp. in Costa Mesa, Calif. The two are preparing Ensemble, a suite of workflow products that integrates with GroupWise. Ensemble lets users communicate from their department workflow systems up to FileNet's high-end, high-volume production workflow systems.

The Action Technologies lawsuit was filed in the U.S. District Court for the Northern District of California. The company seeks monetary damages and requests that Novell stop selling the product and technology.

Viewing multimedia through Windows 95



Source: InfoTech, Inc., Woodstock, Vt.

Windows 95 misses boat for multimedia

By Tim Ouellette

Business users won't be looking to Windows 95 right away for multimedia applications, according to a study released last week.

Microsoft Corp.'s 32-bit operating system can handle the number-crunching burden of large multimedia files. But analysts said users are given pause by Windows 95's memory requirements and the operating system's problems with some software drivers needed to run multimedia programs.

To get multimedia applications to work, users must install drivers for CD-ROM drives and accelerator cards for graphics, video and sound.

"There are lots of workarounds for these things, but for mission-critical applications, it's too hard and takes too long," said Phil Dodds, president of the Interactive Multimedia Association.

"For multimedia, there will be less direct benefits with Windows 95 because you still have the overhead of Windows on the system," said Julie Schwerin, president of InfoTech, Inc. in Woodstock, Vt. InfoTech conducted the study.

An immediate benefit is Windows 95's multitasking, she said.

Business use makes up about 80% of multimedia applications; games comprise the rest. Most business applications are in training and marketing.

A company might want a Windows 95-based CD-ROM, for example, to create a multimedia presentation of a new product line, so the sales force could run the presentation on a client's Windows 95-based PC, Schwerin said.

But with the relatively slow move to Windows 95, she said, large-scale demand for multimedia applications native to Windows 95 won't be immediate.

Instead, she said, vendors are focusing on coming out with multimedia titles for DOS and Windows 3.1 that also can run under Windows 95.

Dynamic duo

Despite the problems, two related developments may help improve multimedia availability on Windows 95 desktops.

Los Alamos National Laboratory in New Mexico last week reported that it had created a recordable CD-ROM that can hold 200 times the data of CD-ROMs. It would allow larger files and whole image databases to be stored on a single CD-ROM instead of on many discs.

On the PC side, Intel Corp. and Microsoft have resolved their spat about how to add native multimedia capabilities to PCs. Intel initially pushed its own Native Signal Processing project, which is based on the Windows 3.1 architecture, but the Santa Clara, Calif., firm instead has decided to give Windows 95 the spotlight.

An Intel spokesman said the company is working to optimize its technology to work with Microsoft's Windows 95 and its Direct-X multimedia application programming interfaces.

Oracle calls database detente on OLAP

By Dan Richman

Oracle Corp. today will claim it has eliminated the need for users to choose between two major flavors of database management systems — relational and multidimensional — when performing on-line analytical processing (OLAP)

This means users can continue to use their SQL-based query tools but can also harness the power of multidimensional DBMSs, Redwood Shores, Calif.-based Oracle said.

OLAP is a method for analyzing data, such as sales and marketing figures, in more detail than is possible through conventional queries against relational systems.

DBMSs

Some vendors contend that only multidimensional DBMSs can provide OLAP, while other vendors say OLAP can also be performed with relational DBMSs.

Fewer limitations

All agree there are limitations to either approach, but Oracle claims that its integration reduces those limitations.

"[Relational OLAP] vs. [multidimensional OLAP] is nearly a religious quarrel, and each approach has its advantages. Now there's no need to choose between them," said Steve Rubinow, vice president of corporate management information systems at Fidelity Investments in Boston.

Fidelity is experimenting with the two approaches for its data warehouse.

Like other users, Rubinow had been wondering how Oracle, which made its name in RDBMSs, would use the seemingly mismatched technology it acquired when it bought multidimensional DBMS vendor IRI Software in Waltham, Mass., in July.

The answer: "very intelligently," said Peter Kastner, an analyst at Aberdeen Group, Inc. in Boston. "So far as I can see, this arrangement doesn't compromise any functionality of either the Express [multidimensional DBMS] or Oracle," he said.

Two-part strategy

Oracle's product strategy has two parts.

Part one is Version 5.0 of Oracle/IRI's Express Server, due out by April 1.

Like prior versions, Version 5.0 offers the SQL Reachthrough feature. If a query can't be resolved from data already summarized and stored in Express Server, SQL Reachthrough copies the necessary data from the relational database into Express Server. Then it summarizes the data, stores it in memory and performs the query on it.

Version 5.0 enlarges SQL Reachthrough by letting database administrators create more detailed meta data — or information about data — so Express Server can more accurately retrieve only the data it needs. It can also retrieve data from Sybase, Inc., Informix Software, Inc., IBM's DB2 and Ingres Products Division databases.

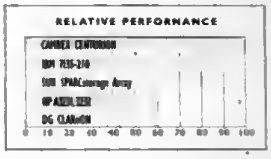
Express Server, which runs under several variants of Unix, sells for $9,000 to $50,000, depending on the platform. The new version will run against databases as large as 4T bytes and perform about twice as fast as the current version, Oracle said.

Most important, Version 5.0 is the only version that will work with the second part of the strategy, Oracle's Transparent Gateway for Express, due out next summer.

The gateway lets applications query Express Server in SQL. Until now, Express Server could be queried only through a product-specific language.

The change means data that has been copied from a database into Express Server can be accessed from any tool that generates SQL.

Performance or protection. Up until now, you had to choose one or the other when selecting a disk array



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Mobile work force boosts MCI sales

$60M automation project aids productivity

By Mindy Blodgett

As the Mobile World/Sales Force Automation Conference kicks off this week in Boston, attendees will have the successful mobile work force story at MCI Communications Corp. to contemplate.

Symbolizing that success is the story of Mrs. Johnson. Her tale of woe has become a legend at MCI. The way the story goes, the elderly woman refused to leave her lifelong home despite a rising flood. She eventually was swept away and drowned.

Mrs. Johnson meets her maker and asks why he allowed her to die defending something that meant so much to her. He reminds her that he sent a boat along to rescue her — twice.

The allegory is something Rick Ellenberger appreciates. The senior vice president of worldwide sales at MCI's core Business Markets unit in Atlanta uses Mrs. Johnson's apocryphal tale to illustrate to employees the importance of the telecommunications giant's huge sales force automation project.

MCI's Rick Ellenberger *tells employees they must learn to use new technology pronto*

"I tell them that when it comes to learning and using the new technology, that is the boat," Ellenberger said. "And I tell them they better get in it."

Now 18 months into the largest sales force automation project ever undertaken, MCI's approximately $60 million investment in mobile client/server technology went better than expected, he added.

Positive results

Analysts say MCI's bold project and its rapid deployment could have far-reaching, positive effects on sales force automation and mobile computing.

"These are complex installations and for MCI to pull it off will sell potential adopters on the technology and the idea," said Judith Hodges, an analyst at International Data Corp. in Framingham, Mass.

"That is what will be discussed at the Mobile World conference — how to get the market going," she said.

MCI in two weeks will open two "Rally Centers," one in Boston and one in Washington.

The centers are MCI's version of the virtual office scheme many companies are adopting to cut real estate costs and encourage telecommuting. More than 5,000 IBM PC Co. ThinkPad 755CD notebooks have been deployed, and more laptops are coming.

Ellenberger said sales and revenue are up 25%, and productivity is on the upswing. He attributed the results to the field automation project.

The goal is to transform the $15 billion long-distance company into a complete information provider of services such as software and cellular products.

Salespeople have on-line remote access to MCI's product information database and to co-workers to help them respond immediately to customer questions.

Others want in

Ellenberger said ever since he announced the project, he has been inundated with questions from companies interested in launching similar mobile work force projects.

His main piece of advice is: Get senior management on board early.

"You have to be role models," Ellenberger said. "A lot of people thought this was a fad. But then they saw me going to all the branches giving computer demonstrations myself."

The effort wasn't without obstacles, however. When MCI discovered that only 15% to 20% of employees were computer savvy — instead of the expected level of 30% to 40% — the company intensified the training phase, Ellenberger said.

Susan Beckmann, the branch director of the Boston Rally Center, said selecting "early adopters" for an informal leadership team in charge of the mobile revolution made a big difference.

Bandwagon

CONTINUED FROM PAGE 1

and by July 1 for Windows.

The suite will be bundled with the operating system so everything needed to make a machine functional will be in one box, said Paula Cappello, a senior director at Oracle who is heading the Bandwagon effort. Oracle will sell the product directly.

Dan Kusnetzky, an analyst at International Data Corp. in Framingham, Mass., said Bandwagon could be a hit "if it helps reduce the very high cost of people needed to install new applications and administer databases at a company's remote sites. It sounds like [Bandwagon] will."

Administrators will be able to remotely set up users' permissions, download the most recent versions of the applications they need and configure their systems for them.

Peter Kastner, an analyst at Aberdeen Group, Inc. in Boston, said, "The market has been looking for something like Bandwagon, without a doubt."

Database administration

Cappello said Oracle foresees a $1 billion sales opportunity for Bandwagon next year.

Bandwagon's implementation of Oracle7 will integrate Oracle's text and video servers into the kernel, making them all accessible with a single sign-on, Cappello said. The enterprise version of Oracle7 requires buying the text and video servers as add-ons and requires users to log on to each server separately.

Pegasus, the messaging component of Bandwagon, is Web-based groupware that is intended to supersede Oracle's Office, said Sohaib Abbasi, senior vice president of the tools products division at Oracle.

Pegasus will include conferencing, document management, mail, calendaring and workflow management. It will be delivered by April 1, and pricing hasn't been set, Abbasi said.

Pegasus may be renamed Collaborative Services before its release. It will be an upgrade to Oracle's Office, but Abbasi promised a smooth migration.

What's riding on Oracle's Bandwagon

Oracle7 Business Server	Oracle7 Business Suite Manager	Networked Business Client Pak
• Supports one to four Intel processors	• Help desk on every machine	• SQLNet networking software
• Handles numeric data plus text, video and documents	• Centralized administration, software loading and user management	• PowerBrowser Web browser
• High-availability features		• Oracle Objects for OLE development tool
• New Pegasus messaging		• Mobile Agents mobile-computing software
• Web access		• Mail clients

Business Suite Networking and Gateway Option: • Access to legacy or non-Oracle relational data

Wares at E-mail show focus on 'net

By Suruchi Mohan and Tim Ouellette

As electronic-mail vendors gear up to display their wares at the E-Mail World exposition this week in Boston, one thing is certain: The Internet will be the focal point.

"The show will revolve around how everyone connected to the Internet first," said Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston. He said he expects everyone will try to take credit for innovation.

Whether or not they connected first, the vendors are scrambling for a piece of the Internet pie. What follows are some of the announcements expected next week.

▪ **Banyan Systems, Inc.** in Westboro, Mass., will announce BeyondMail for Simple Mail Transfer Protocol, the company's first product from its Internet division. The package will provide hot links to the World Wide Web from within a message. Users will be able to connect to a Web site by clicking on a uniform resource locator embedded in a message.

▪ Southfield, Mich.-based **Campbell Services, Inc.**'s On-Time Web Server will let users access their calendars from the Internet. The product will go into beta testing this month.

▪ **CE Software, Inc.** in West Des Moines, Iowa, will announce WebArranger, an Internet information management application. The product works with many Web browser technologies, including Netscape Communications Corp.'s Navigator, to provide a simple means of tracking and organizing Internet data.

EMAIL WORLD INTERNET EXPO

▪ **Fabrik Communications, Inc.** in San Francisco will announce a gateway and connection service to the Internet for Microsoft Corp.'s Mail users. The company already has a similar service for users of Lotus Development Corp.'s CC:Mail.

▪ **Siren Software Corp.** in Palo Alto, Calif., will announce Siren Mail 3.0 for the Macintosh. Siren Mail, a client/server messaging product, is built on Internet protocols. Besides Macintosh clients, it supports Microsoft's Windows 3.1, Windows 95, Windows NT, X Window System and character-based terminals. Its address book supports client- and server-based data repositories.

▪ **Control Data Systems, Inc.** will announce an agreement to provide its MailHub E-mail products to Sprint Corp. for Sprint's internal messaging system.

The role of E-mail as a potential re-engineering tool when used with workflow software also will be explored. Some analysts and vendors say coordinating messaging technologies with an E-mail system can provide inexpensive, easily configurable workflow. Others are looking at merging groupware, messaging and imaging with workflow.

▪ **TeamWare**, a division of ICL, Inc. in Santa Clara, Calif., will show TeamWare Office 3.5, groupware integrated with a workflow module called TeamWare Flow 1.0.

Internet protocols gain security support from E-mail vendors. See page 54.

Purina Mills Satisfies Data-Hungry Decision Makers with the SAS® System

Daignault, Brown, Durbin

Serving Up the Right Information... at the Right Time

Every business day, information managers at Purina Mills—America's leader in animal nutrition—satisfy a different kind of craving: the need of top executives to get their hands on strategic information to support better quality decisions.

Luckily, they've cut preparation time substantially since adding SAS software to their menu of productivity tools. "Comparing the SAS System to anything else we've ever used to analyze business data, I'd say SAS software is by far the best," says Gerry Daignault, Region Controller. "There was a time when we had to do things manually. But today, we can review many aspects of our business just by pointing and clicking."

Purina Mills relied on the SAS System to build client/server applications now in use by field representatives and managers at specific manufacturing locations. Daignault adds that "SAS software is so simple to use that even those managers and executives who have not previously used computers feel right at home."

Feeding Decisions at Every Level

According to Mike Durbin, Supervisor of Information Services for Purina Mills, his department needs to get information to managers as quickly as possible, who in turn must deliver relevant details to upper management as quickly as possible.

"We use SAS software in many areas of operation including budgeting, research, and as a management support tool," says Durbin. "Activities include tracking customer volume, current income, and comparative analyses of income year-by-year."

Connie Brown, Purina Mills Information Analyst, says the key business benefits of using the SAS System are "improved productivity by key field management and a consistent thought process in the use of management information. There is no question that field management spends less time gathering numbers and more time using good information to support the decision process. Mapping and graphical presentations are becoming more important in the decision process; and SAS Institute has been very supportive in helping us implement these tools."

"SAS software is doing the job for us," Daignault concludes. "All of our directors will eventually have it available.".

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ISDN reaches out to remote sites

By Bob Wallace

Hoping to build on the soaring popularity of Integrated Services Digital Network (ISDN) to tie remote sites to enterprise-wide networks, Ascend Communications, Inc., Cisco Systems, Inc. and IBM last week announced ISDN products for far-flung sites and telecommuters

Ascend unveiled the MAX 1800 remote access switch, Cisco launched three low-cost remote office routers, and IBM pitched in with two low-end routers that handle multiple protocols

The bevy of new and flexible products all support ISDN Basic Rate Interface (BRI) lines Each line has two 64K bit/sec B channels that can typically be combined to provide a single 128K bit/sec link for remote users

At $10 to $80 a month, ISDN isn't yet ubiquitous in the regional Bell holding companies' territories However, analysts said the service offers a low-cost alternative to expensive 28.8K bit/sec modems and dial-up links.

"It's no longer a case of ISDN standing for 'I Still Don't Know,'" said Mark Langner, a senior analyst at TeleChoice, Inc., a consultancy in Verona, N.J. "That's because most every major networking vendor is delivering ISDN products or products that can use ISDN as a wide-area network option."

Eyeing ISDN

The following ISDN internetworking products will be available next month

Vendor	Product	Price
Ascend Communications	MAX 1800 MAXlink	$6,400 to $7,200, bundled with all MAX products
Cisco Systems	750 routers	$999 to $1,799
IBM	2210 Nways router module	Not available

At I-To the Future, a Park Ridge, N.J., franchiser of learning centers that let children at far-flung sites collaborate on projects using multimedia tools, ISDN is essential for two reasons.

"We rely on ISDN as the communications instrument that we use to provide technical support to the 11 learning centers," said David Dunne, marketing director at the company. "And the children use videoconferencing over ISDN lines to communicate and work together."

Products such as Ascend's MAX 1800 remote access switch make videoconferencing possible. The box can simultaneously support eight ISDN BRI lines and can be combined with the vendor's new MAXLink remote client software to provide a complete remote access package.

The MAX 1800 isn't a fixed-configuration product. It has two expansion slots for cards that support analog or digital modems, terminal server functionality and/or video bandwidth-on-demand capabilities.

For its part, Cisco rolled out the 750 line of remote office routers [CW, Nov. 20]. The 751 has one Ethernet port and one BRI port for international ISDN; the 752 has one Ethernet port and a port for BRI, as offered in the U.S. The 753 has one Ethernet port, one BRI port and an interface that lets users connect an analog telephone to the device. This money-saving capability lets the phone share the BRI with a LAN.

The 750 series routers can support up to four end users on a single Ethernet line. Cisco claims it is shipping more than 100,000 B channels' worth of ISDN products on a quarterly basis. Each BRI supports two B channels.

NetWare gains ISDN support; Intelli-Com offers ISDN package. See page 70.

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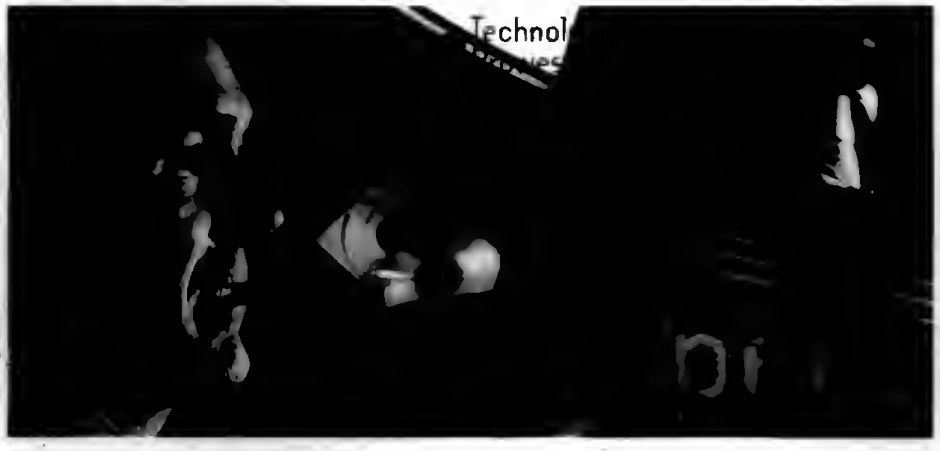

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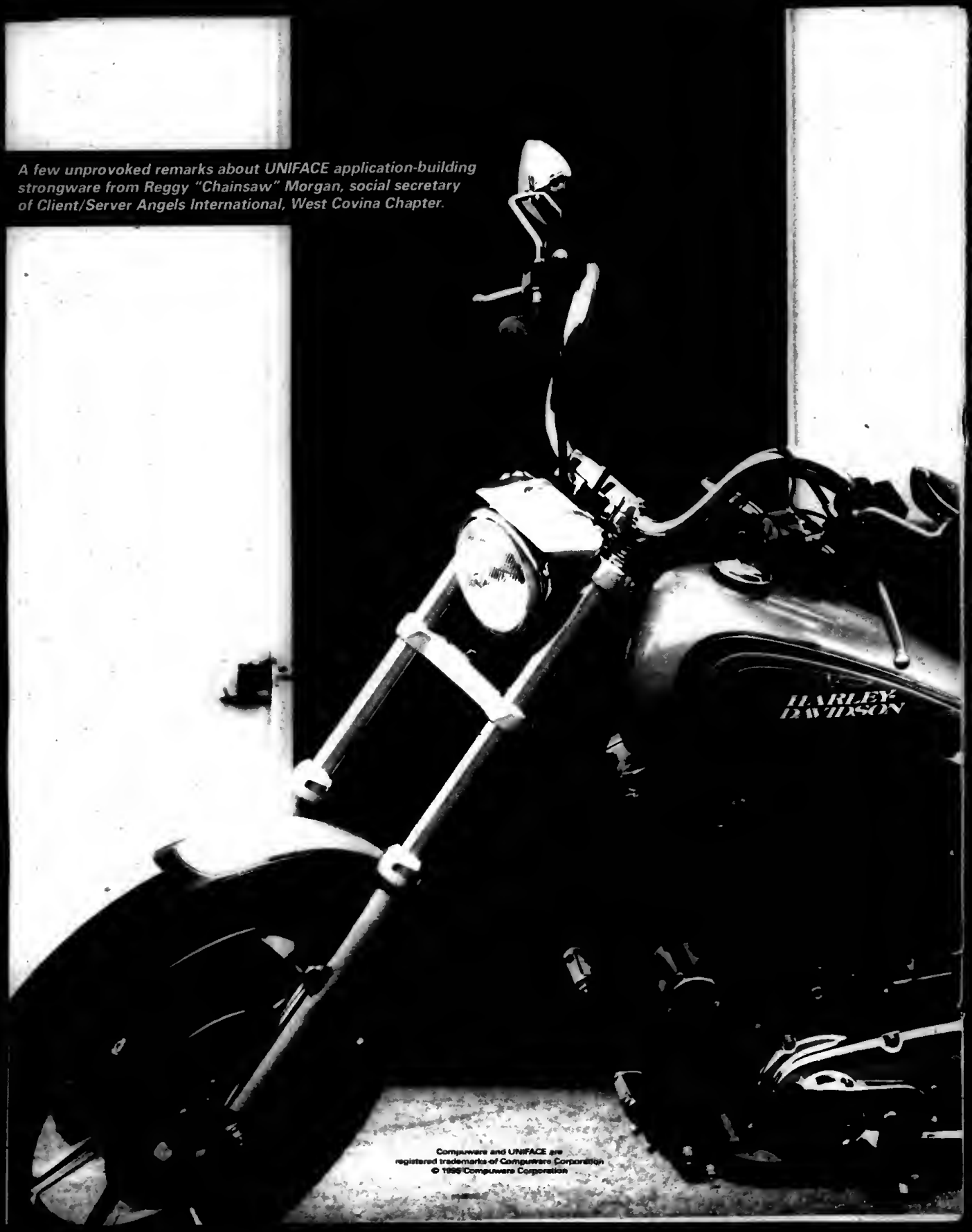
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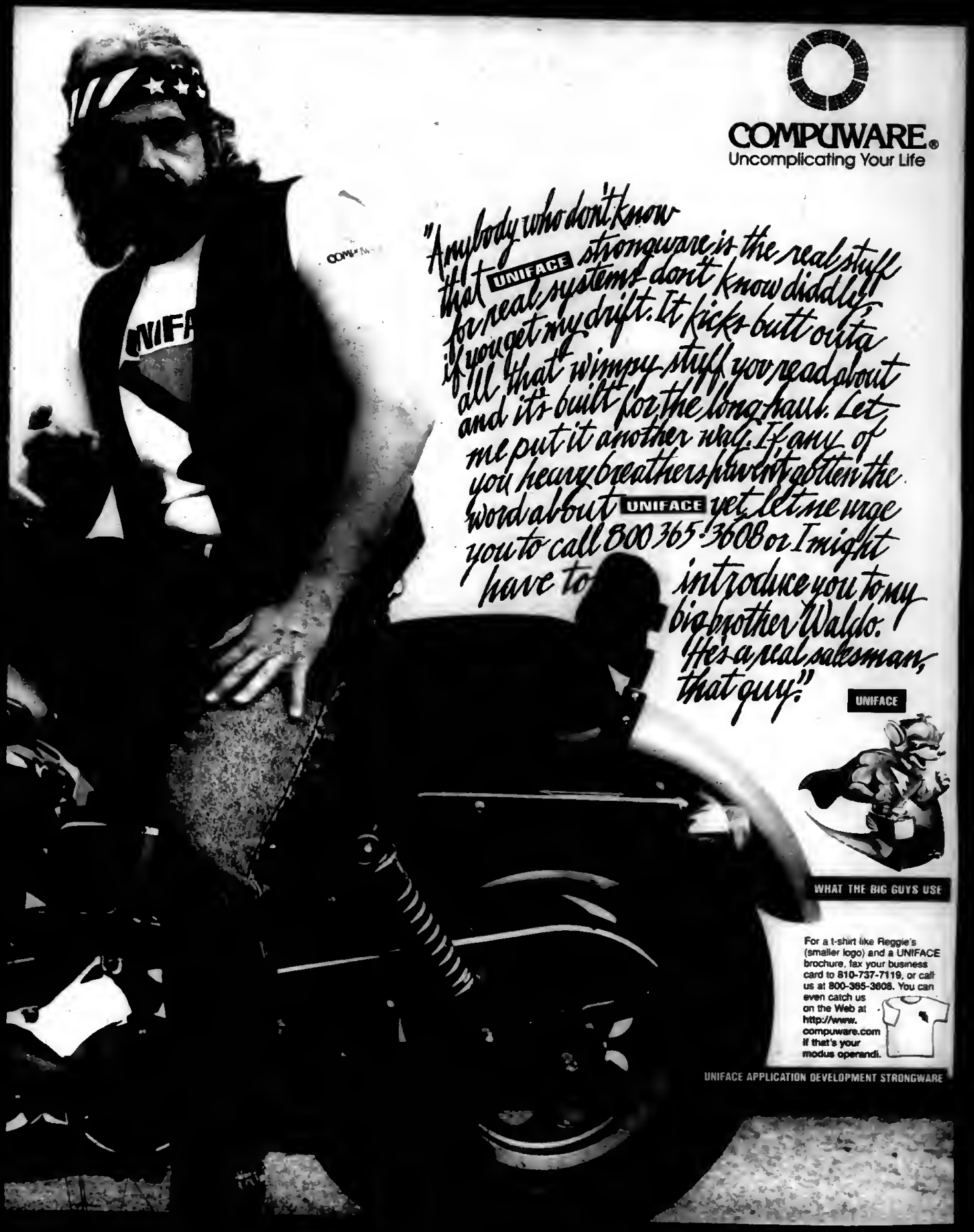
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Hershey kisses up to the Web

By Kim S. Nash

Internet-inspired workers at Hershey Foods Corp. last week kicked off a skunk works effort to prove to upper management and end users that the World Wide Web can be an efficient piece of core information systems. About 150 marketing, human resources and technical users at the Hershey, Pa.-based chocolate maker began a 90-day test of a suite of internal Web, or intranet, applications.

During the pilot, companywide memos, forms, purchase orders, newsletters and other routine documents will be posted and updated on a central Web server. PC and Macintosh users across several departments have access.

Routing the material electronically is expected to save money for Hershey and time for its employees, according to Tom Loser, a database administrator and self-styled webmaster at the candy company. "Right now, it takes a few days or even longer to get company publications and notices out through interoffice mail," he explained. "The Web is instantaneous."

Bureaucracy, however, moves at a much slower pace. The project doesn't have a formal corporate OK or significant funding yet, Loser noted.

Home sweet home page

Hershey Foods launched its external, 50-page Web site – http://www.hersheys.com – on the cheap

Components of the Web page	Price
Site design and graphics	$2,200 ($12 per hour for roughly 184 hours)
Internet account	$100 per month
Ongoing charges	$1 per page, per month
Total first-year costs	$4,200

"But since no one told us we couldn't do it, we did," said John Long, a Web booster and director of corporate communications.

The applications were built after hours and at home, primarily by Loser and Long. The director of Hershey's test kitchen, a few public relations workers and some brand marketers also lent a hand. The team's first project — an external informational Web site launched in March — had to be done as cheaply as possible (see chart). IS was minimally involved with that project. Loser was the only IS staff member working on it. He spent 12 to 15 hours of his free time per week on the project.

Now the team has to prove that the experimental intranet applications that were launched last week are more than the pet project of a group of Web-heads.

User demand will determine the fate of the underground effort, Loser said. "When they figure out that they can do real work with it or save real money with it, then it will get put on the front burner," he said.

The applications run on free Macintosh-based Web server software downloaded from the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.

Nuggets

Hershey's external Web site at http://www.hersheys.com offers sweet information including recipes, nutrition data and the history of the popular "kiss."

A Closer Look at why browsers aren't for casual use anymore. See page 61.

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A White Paper brought to you by *Computerworld* and *Software Magazine*.

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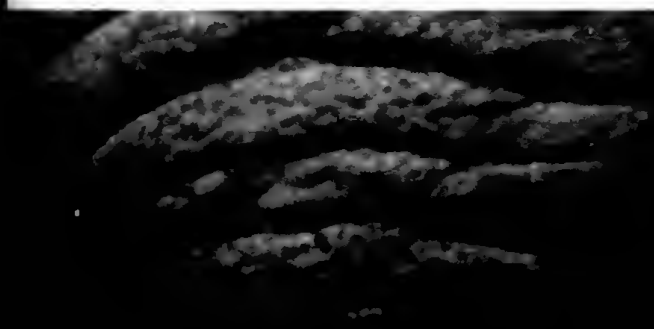

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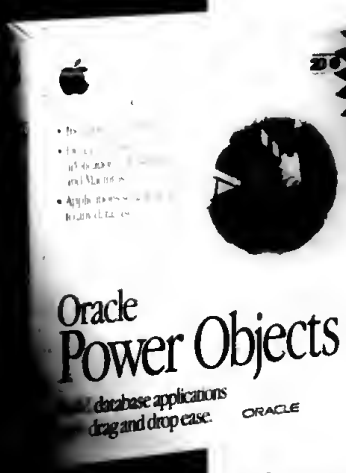

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Hotels on the Internet

CONTINUED FROM PAGE 1

lodging industry group in Miami. Now that demand is more in line with the supply of hotel rooms nationwide, "it's a very competitive industry, and everyone is trying to find an advantage," he said.

Hotels are going first to the Internet. The number of hotel companies with information pages on the World Wide Web has increased 100% in the past six months, Berman said.

Each of the country's 25 largest hotel chains already has a Web site or plans to create one soon, according to "CKC Report," a hotel technology newsletter in New York. More than 1,000 hospitality and travel-related organizations have Web sites, according to the newsletter.

Hotel companies' Web pages contain information that can include room location and rates, digital photographs of rooms and views from the room windows.

Beginning next month, travel agents and individuals also will be able to book reservations at some 6,000 properties through TravelWeb, a Web site operated by The Hotel Industry Switch Co. (Thisco), a Dallas-based consortium of 20 major hotel companies.

Thisco's computer system converts users' incoming messages from the Web's Hypertext Markup Language into a format that can be read by a hotel's reservation system, such as the one at Hyatt Hotel Corp. Thisco then forwards the request to the Hyatt system, which sends back a confirmation.

The service is free to customers. Thisco charges the hotels about half of the $3.50 per transaction fee charged by the airlines' computerized reservation systems (CRS). About 85% of all hotel reservations are funneled through CRSs, said Robert Langsfeld, a travel management and automation consultant in Incline Village, Nev.

During the next year, hotel executives expect Internet-based bookings to account for less than 10% of all reservations. Still, the ability to book reservations electronically will become critical as voice reservations continue to decline and more customers become PC- and Internet-literate, analysts said.

Another benefit for customers is that reservation databases contain real-time information. CRSs often don't have current information on vacancies or other pertinent details that travel agents need.

TravelWeb already contains an "interactive electronic catalog" of 5,000 properties. PC-based users can search the catalog for a hotel and conduct the search by location, rate or even the hotel's proximity to a world-class golf course.

But before most hotels can make their reservation systems directly available to Web surfers, they first must revamp their databases so consumers can understand them.

Programmers at Hilton Hotels Corp. in Beverly Hills, Calif., are about half finished rewriting information about the company's 220 properties and 932,000 rooms. The data will be stored in a Sybase, Inc. database that can be accessed over the Internet.

"I think the biggest impact is that we'll be accessible via computer technology to a travel agent or a business person on a laptop 24 hours a day, seven days a week, with very current and accurate information," said Bruce Rosenberg, vice president of marketing distribution at Hilton Hotels.

"Having an electronic database of all [the] hotels also gives us the flexibility to use data and to move it very quickly," Rosenberg said. "If we see another Web site that we want to be on, we can get up and going very quickly."

Salespeople will be able to tap into a CD-ROM version of the database for information about meeting and banquet facilities that might be used for corporate sales presentations, he said.

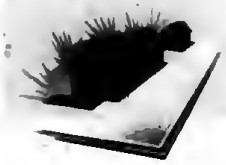
Hyatt's information systems arm, Regency Systems Solutions, Inc. in Oakbrook Terrace, Ill., is rolling out a client/server system that gives 600 salespeople nationwide a single view of the company's 156 properties and 156,000 rooms. The Envision system was built in Powersoft Corp.'s PowerBuilder. It contains links to local client/server systems that track meeting or banquet room inventories, for example, at individual hotels.

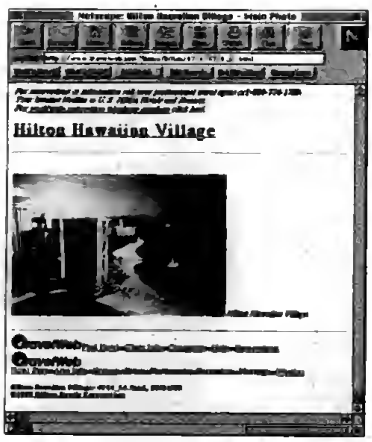
Using Envision, a Hyatt sales manager in Washington can book a Hyatt hotel in San Francisco for a corporate client who may need 300 guest rooms and several meeting facilities, all close to a major sports arena. The sales manager logs these parameters into the system, which conducts a search of Hyatt's corporatewide inventory.

Reserve now

Hotels continue to extend the scope of automation by integrating supplemental software with centralized property management systems. Leading supplemental packages include:

- Group sales and catering
- Remote check-in and check-out
- Credit-card authorization and settlement
- Food and beverage management
- Database marketing





Using TravelWeb, *customers can search for a hotel by location, rate or even proximity to a museum or national park (above). Hilton Hotels Corp. is one of 25 of the country's largest hotel chains to have a page on the World Wide Web (right).*

Rolling out the electronic red carpet

At Atlanta-based Ritz-Carlton Hotel Co. and Caesars World Casino in Las Vegas, furnishing top-notch customer service involves keeping tabs on precisely what customers like and dislike.

At the Ritz-Carlton, it often goes beyond that. Guests can expect even their "unexpressed desires" to be met.

At Caesars, customer preference information is gathered using a Tandem Computers, Inc.'s reservation system, which is then stored in a Tandem database where users can access discrete customer information from their workstations.

"We know everything about every trip you've made here, what kind of wine you like or how much you've won or lost," said David Starr, chief information officer at ITT Corp. in New York, the parent company for Caesars World and Sheraton Hotels.

The customer-tracking system has been so effective helping Caesars World meet the needs of its biggest spenders that ITT plans to apply the same data-mining techniques to the IBM DB/2 reservations systems used at its Sheraton Hotels, Starr said.

ITT CIO David Starr *says data mining has been so effective at Caesars World, ITT will try it at its Sheraton Hotels*

Staffers at Ritz-Carlton's 32 properties are trained to notice and record guests' "unexpressed desires in an on-line database," said Bruce Speckhals, vice president of IS.

For example, if a guest has a fruit basket in his room, and the housekeeper notices there aren't any more apples, the next time the guest stays at the Ritz-Carlton, he will find only apples in the basket. Or perhaps the guest prefers a feather pillow instead of a foam one or shower gel to bar soap.

"You have to stay with us at least twice, and your record is with us from that point on," Speckhals said.

All this information goes into an on-line database known as the guest-recognition system. Concierges, housekeepers, cooks and waiters all can access the system from hotel-based PCs linked over a wide-area network.

"Guest recognition is very important to us," Speckhals said. "This is because 97% of our guests are satisfied when they leave, but that doesn't make them loyal. They may be here because their other hotel [choice] was booked.

"But if we give them their unexpressed desires, they'll come back," he said.

— Julia King and Thomas Hoffman

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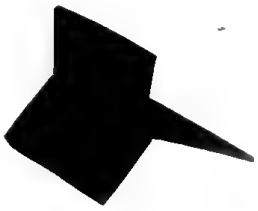

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Computer Industry

Aurum finds elbow room in sales force automation

By Mindy Blodgett

The exit of the biggest player in the sales force automation field has shaken the market and created new opportunities for up-and-comer Aurum Software, Inc.

The Santa Clara, Calif.-based sales force automation software vendor hopes to capitalize on Dun & Bradstreet Information Services' decision to jettison part of its successful sales force automation division. The Murray Hill, N.J.-based D&B unit left the business-to-business sales force automation market in July when its subsidiary, Sales Technologies, Inc. in Atlanta, announced it would discontinue the marketing and development of its Snap for DOS and Snap for Windows.

At this week's Mobile World/Sales Force Automation Conference in Boston, Aurum will announce that D&B will recommend to Sales Technologies customers that they migrate to Aurum's platform. Aurum has purchased D&B's customer list for an undisclosed sum and hired away some of the top managers and employees in charge of the Snap line.

President Mary Coleman said Aurum hopes to "double its business" by persuading the biggest D&B customers to migrate to Aurum's SalesTrack. "We see a $10 million opportunity here," she said.

To lure D&B customers, Aurum is offering a migration program to Snap for Windows called JumpStart for Snap. The companies have also jointly developed a data migration tool, Snap DataMapper. It is aimed at transferring data from the Snap database to SalesTrak.

Aurum President Mary Coleman *sees a '$10 million opportunity' in D&B's customers*

Aurum Software
Santa Clara, Calif.

Provider of enterprise client/server software for sales force automation and customer service and support

Financials: Privately held
Founded: 1990
Employees: More than 100
Products: SalesTrak, TeleTrak, SupportTrak and WebTrak

Good move

Coleman said it makes sense for Snap customers to move to SalesTrak because the two products share an underlying technology platform. For instance, both technologies use the Gupta SQL Base database from Gupta Corp. to connect users to the corporate data center.

Judith Hodges, an analyst at International Data Corp. in Framingham, Mass., said that while D&B was the sales force automation market leader in 1993-1994, its revenues were declining. During that period, D&B made $13.1 million, down from over $14 million the year before.

Industry observers say the move could improve Aurum's position in the marketplace. Aurum is ranked about 10th, according to Hodges. Other players include Fastech, Inc. in Broomall, Pa.; Saratoga Systems, Inc. in Campbell, Calif.; and Brock Control Systems, Inc. in Atlanta.

But Wendy Cole, an analyst at Gartner Group, Inc. in Stamford, Conn., said that while Aurum and D&B are a good fit, "customers should not blindly go to Aurum just because D&B has rubber-stamped it."

Other software vendors, including Brock and Saratoga, have also devised migration programs for Snap customers, she noted. Brock offered incentives to Snap users to migrate to its TakeControl product, including discounts. Saratoga offered to port users to both its DOS- and Windows-based sales force automation software.

Aurum hasn't released pricing on its migration path.

Briefs

HP profits soar
Hewlett-Packard Co. finished out its fiscal year, ended Oct. 31, with $31.5 billion in revenue, compared with the $25 billion recorded last year. Profits were up 52%, to $2.4 billion, over the $1.6 billion recorded last fiscal year.

AT&T fills in blanks
AT&T Corp. has named Henry B. Schacht, former chief executive officer of Cummins Engine, chairman and CEO-designate of an unnamed equipment division slated to be spun off in 1996. It named Richard McGinn president and chief operating officer-designate.

SHORT TAKES Open Market in Cambridge, Mass., has named Gary Eichhorn CEO. He previously held posts at Hewlett-Packard Co. and Digital Equipment Corp. and helped create the Common Open Software Environment.

Data warehousing IPO skyrockets

By Dan Richman

Why was the initial public offering (IPO) by Arbor Software, Inc. on Nov. 7 among the best-performing IPOs in history?

In part because the market respects Arbor, a 4½-year-old company that is "well managed and well focused, with good partnerships and a good strategy," said Aaron Zornes, a senior analyst at Meta Group, Inc. in Stamford, Conn.

Initial public offerings

But the hugely successful IPO is also attributed to the fact that the Sunnyvale, Calif.-based Arbor is a significant player in data warehousing, a market segment that "the world believes is the next coming," said Gibbs Moody, a senior vice president at First Albany Corp., an investment firm in Albany, N.Y. "There's just not enough data warehousing company stock for all the investors who want it."

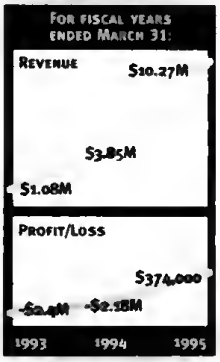
Arbor was an early surfer on the big kahuna of data warehousing. Founded in April 1991, it began shipping its Essbase multidimensional database management system a year later.

The company drew fire for a 1993 report on on-line analytical processing (OLAP), the sort of analysis that Essbase provides to warehouse sites. The report concluded that only Arbor met all 12 rules defining how OLAP should work. It was produced by the respected (though now defunct) database consulting firm of Codd & Date — but was sponsored by Arbor.

Nonetheless, the report helped popularize OLAP and didn't appear to slow Arbor's growth. The company's revenue increased dramatically, and its rather significant initial losses reversed for the first time in the fiscal year ended this March 31 (see chart). It had 62 employees as of Sept. 30.

At a glance

Arbor Software
Founded: April 1991
Product: Essbase, a multidimensional database management server
First shipment: April 1992



A founding father

Arbor was also instrumental in founding the OLAP Council, an industry group formed to promote OLAP and create an application programming interface into participating companies' products.

To decrease administrative overhead, Arbor has several partners for sales and support, most notably Comshare, Inc. in Ann Arbor, Mich., which generates more than one quarter of Arbor's revenue.

Strategically, in creating Essbase, Arbor lined up on one side of a schism forming in the data-analysis world. Arbor's side advocates pumping data into multidimensional DBMSs for analysis. The other side favors keeping data in relational DBMSs and analyzing it there. Some analysts say multidimensional DBMSs will never amount to much, but others say they will find large, secure niches while relational OLAP also flourishes.

Most of Arbor's large customers are in the high-tech, banking or finance industries. Essbase is used by 7% of the 250 information systems executives surveyed by Meta Group last year. More, however, used competing products from Red Brick Systems, Inc. in Los Gatos, Calif., (23%); Pilot Software, Inc. in Cambridge, Mass., (15%); or IRI Software, Inc. in Waltham, Mass. (15%).

Meta Group estimates the data warehousing market is worth $2 billion this year, including hardware and all related software. It further predicts that the market will grow to $8 billion by 1998, with multidimensional DBMSs making up only 5% of that market, Moody said.

Discreet Logic offers stock split. See page 123.

Free speech.

"SMART CONNECTIONS TO THE WORLD."

The keynote speech, given by Andy Grove, Intel's CEO, at Telecom 1995 in Geneva, Switzerland.

As the PC and telecommunications industries converge, Intel technologies are at the center of a communications revolution.

Intel's CEO Andy Grove delivered the keynote speech at Telecom 1995. His speech, "Smart Connections to the World," is a sneak preview of what's to come. In it, you'll find out why PCs are rapidly becoming the world's most ubiquitous consumer device, outselling televisions worldwide.

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■ SunOS	■ NetView
■ HP-UX	■ OpenView
■ Windows NT	■ Oracle/Sybase
■ MVS Sysplex	■ DB2/IMS
■ NetWare	■ MQSeries

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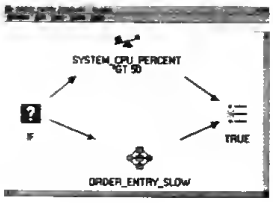
Using the lessons of client/server, the Candle Command Center architecture distributes systems management functionality across three components: Candle Management Server,™ Candle Management Workstation™ and OMEGAMON® Monitoring Agents.



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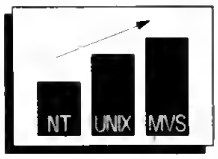

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The central issue

Of all the IS issues that have surfaced in the past 15 years, one has bobbed up and down so often that watching it can make you seasick.

Amazingly, to this day, it is unresolved. Fundamentally, should IS be centralized or decentralized?

It really is amazing because the answer is simple. It should be centralized — most of it, most of the time — except when certain circumstances prevail that obviate a more centralized management scheme. OK, maybe it isn't so simple.

But I'll stick by the presumption that centralized management these days makes sense in most IS environments and will for the foreseeable future.

Decentralized management, wherein user departments have the loudest voice in technology acquisitions, didn't make sense even at the height of its popularity in the late '80s. It was thought that decentralized management would crack the wall of reticence that old-line IS had to new technologies and, therefore, speed information flow throughout the organization.

For the most part, it didn't work. The legacy of decentralization is characterized by E-mail systems made up of noncompatible parts, lat clients bursting with junk that users really don't need and don't use, departmental networks that are notoriously difficult to link and the rise of what the Gartner Group calls the hidden costs of client/server, where up to half of the real costs are below board but real nonetheless.

Today, more than ever, the IS world needs a planner, architect, benevolent despot. This centrist must design a communications backbone that will take the company into the 21st century. That might well mean ripping up a lot of SNA track along the way but in a controlled and intelligent manner.

The IS world needs someone to say, "This will be our mail system. All others are out. This is our mainframe. It will be around a long time."

These and so many other decisions will often defy consensus because of the user preferences that have built up over the years. Consensus will be replaced by singular leadership, at least on major architectural decisions and in most cases. It makes good business sense.

Bill Laberis

Bill Laberis, *Editor in Chief*
Internet: *bill_laberis@cw.com*

Dumb Web terminals a great idea

Nathan Myhrvold's article ["A dumb terminal is just a dumb idea," CW, Nov. 13] seemed more a defense of the status quo than a serious criticism of "dumb" Internet terminals.

Spending $2,000 to $3,000 on a PC is a lot of money for the average family. Even worse, a PC is an endless cycle of purchasing. The PC you buy today will be outdated within a year and will perform so poorly in three years that you will be forced to replace it. Nothing else in the American home becomes obsolete this rapidly.

The inexpensive Internet terminal would be affordable and hopefully remain useful longer than a PC. And if we ran applications from servers, it wouldn't force us to be our own IS managers.

Jeff Greer
Indianapolis
71053.2723@compuserve.com

Nathan Myhrvold echoes a wrong-headed sentiment that really pushes a button with me.

In a nutshell, he says a Web designer shouldn't limit himself to the lowest common denominator when the mass market is using so-called "advanced" browsers that support all the "cool new data formats and features."

Microsoft and Netscape have been fighting a features war that threatens to fragment the Web. But there is a standard that would give every browser vendor the opportunity to add as many proprietary bells and whistles as it cared to and still keep the lowest common denominator. It's called HTML 2.0 and style sheets.

The ability to enhance a document with external presentation hints has been around for as long as in-line images. The problem is that the major browser vendors have been too busy trying to outblink one another to bother developing a browser that complies with the Hypertext Markup Language (HTML) standards and still retains the capability to support enhancements.

I hope the Web survives these growing pains to live up to its promise of becoming a worldwide egalitarian information infrastructure, where even the lowest common denominator "dumb terminal" can fully participate.

Mike Batchelor
Arnold, Md.
mikebat@abs.net

Nathan Myhrvold is right and wrong. He is right in indicating that a $200 to $500 practical device is probably not feasible. I'd anticipate a 1998 time frame for that.

However, running today's software is not the point — running tomorrow's is. Today's software is large and monolithic. Tomorrow's software, if we are fortunate, will be made up of a relatively lightweight collection of Web objects that do specific tasks.

A simple and elegant device that exploits a Sun Java-like object-empowered Web will be flexible and relatively inexpensive. Myhrvold's error is in saying that such an appliance will lock "today's Internet into a limited terminal." It will do just the opposite.

Charles M. Durrett
The WebBook Co.
Birmingham, Mich.
TheWebBook@aol.com

Nathan Myhrvold's op-ed piece shows that he has spent too much time in the lab and not enough time in the family room. Far from being the "world's best-selling consumer electronics device" (perhaps he has forgotten about television, radio, VCRs, stereos and video game players), a consumer PC has a limited market as long as prices remain high.

For the 65 million U.S. households that don't yet own a 386 or a 486, a PC that connects to the Internet and runs basic applications may be just the ticket to the real mass market. These devices won't run the muscle-bound software that Microsoft loves to push, but they will open the world of on-line communications to the majority of consumers. Not such a dumb idea in my book.

Rick Blum
IS research program manager
rblum@decisionr.com

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Bill Laberis, Editor in Chief, Computerworld, P.O. Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Verbatim

From "P.C. Letter," an industry newsletter in San Mateo, Calif.:

Enjoy the Golden Age of the Internet while you can because it's soon going to end. The anything-goes Internet we've enjoyed is going to be replaced by a big-business Internet filled with rules and problems. And with much higher barriers to entry than exist today.

Right now, it's still possible for a handful of people to create and maintain an interesting, high-volume Web site. But as technologies like Sun's Java language and Microsoft's Blackbird make it possible to dramatically improve the user experience, they also require even larger numbers of programmers, artists and content creators....

In less than a year, the gulf between the big commercial sites... and the small... systems will be insurmountable. It will be, essentially, the difference between the TV networks, the local stations and the cable-access channels.

From remarks by Edward W. Kelley Jr., member of the Federal Reserve Board, on security for banking systems:

While improved information systems offer tremendous opportunities for greater efficiency and effectiveness, new systems quickly become obsolete. This means that investments in training and technology cannot abate. With rapid change, it may be tempting to develop and implement new systems that skimp on internal controls in the rush to get products "out the door." However, an effective control environment in the front and back offices is critical. More automation of financial processes also makes it clear that security features and internal controls should be fundamental in design to avoid substantial costs and disruptions in the future. The need for security was recently and vividly illustrated by the failed attempt by persons in Russia to breach Citibank's electronic transfer system...

Object lessons for the clueless

Michael Cohn

Learn why object-oriented programmers make big bucks and say "inheritance" a lot.

Object-oriented technology is the hottest topic in 20 years. But amazingly, most folks are clueless about it. How did it get here? What does it look like? And why should I pay some guy named Vincent $195 per hour because he has it on his resume?

You need to learn about *objects*. But don't buy a book. Don't read a manual. Everything written about object-oriented technology is either confusing or a cure for insomnia. Instead, let me help.

What you were afraid to ask

Here's a half-page primer — what you need to know about object-oriented technology.

A definition. You can try one of two generally accepted conventions to define "object": 1: a collection of characteristics defined by encapsulated methods and data used in conjunction with message parameters that trigger functional logic to subsequently direct reusable software components and instances of interobject relationships; or 2: just nod your head and hope people will assume you're on board.

Terminology. It's inappropriate to present an exhaustive list of object buzzwords, partly because there are so many of them and partly because most consultants don't know squat about half of them but will still pull down $3,000 a day plus expenses.

Allow me to list just a few of the popular terms:

- Message: How objects are invoked, by use of parameters or "arguments."
- Encapsulation: Ensures the invoker is unaware of what's happening inside the object (unless, of course, the arguments get really loud).
- Polyporphism: Lets different objects respond differently to the same message.
- Poly*gnor*phism: Lets different objects pretend they didn't even hear the message in the first place.
- Inheritance: Ensures that an object easily can take attributes from many other objects, even if they have a good lawyer.

The history of object-oriented technology. Few folks realize that object programming was invented in Norway in 1969.

Objects suddenly would let hundreds of programmers work together, developing and sharing software that closely modeled real-world processes. And this might have been a great idea, except there were only *three* object programmers in Norway at the time and two already weren't talking because of some dispute over fjord-front property.

Why objects? Do your folks write a routine for your mainframe, then write it over again for your Unix box, then again for your AS/400 and once again for your PC? This can become amazingly inefficient — although after four tries, odds are *one* of them might work.

Instead, you need to lower your costs and improve quality. Objects allow *reuse* of software, increase your productivity and ensure that you get home for supper.

The message to you programmers out there is to learn object-oriented technology and take it easy. From now on, design it once, code it once and then change jobs before anyone can test it.

Remember, object-oriented guys make big bucks and get snapped up in no time — except maybe in Norway, where I bet they wish they'd kept the whole thing quiet.

Cohn, based in Atlanta, became a veritable expert on object orientation after reading three or four paragraphs on the subject.

Win 95 equals Mac 87, but who cares?

Efrem G. Mallach

Buyers don't care about the historical points such as who had long file names first.

If those who must compete with Windows 95 had their way, truth in advertising laws would force Microsoft to proclaim, "Windows 95: The soul of DOS, the heart of OS/2 and the face of Macintosh."

These claims are true. Windows 95 uses more leftover 16-bit code than its ad writers would like us to believe. It doesn't do much internally that OS/2 hasn't done for years. And its user interface differs just enough from a 1987 Macintosh to satisfy copyright lawyers.

These claims also are irrelevant.

Take the Macintosh's interface (or long file names or plug-and-play...). Today's computer buyer doesn't care who had them first, any more than today's car buyer cares who had the first electric starter. That person has only one question: Does the system I'm considering have the feature now? When you are spending several thousand dollars for a piece of business equipment, pedigrees are historical footnotes.

Ditto for the functionality of OS/2. If Windows 95 has it now, history is history. Ditto for 16-bit code. Why should anyone care? If users can get files on and off floppy disks, it doesn't matter if Windows 95 does it with 16-bit code, 32-bit code or Morse code.

This is as it should be. Complaining about a "what have you done for me lately?" buyer attitude is sour grapes. Business decisions — if they don't involve personal loyalties or corporate relationships — should be based on expected return on investment. When and where a product's developers found their inspiration isn't part of the accounting equation.

Get with the program

If someone wants to compete with Windows 95 they must face the facts:

- Windows 95 has what most business users need. (So do other systems, but that's beside the point.)
- Microsoft has convinced most business buyers that Windows 95 is the logical upgrade from DOS or earlier versions of Windows.
- Eighty percent of the non-Windows 95 business world uses that predecessor software.

Anyone who doesn't like Windows 95 must identify a significant advantage of another product, an advantage that matters to a lot of people. Then, that firm has to tell those people about it.

This is Marketing 101. Yet Apple, for instance, spends millions of dollars telling us they had long file names and a recyclable trash can first. Macintosh loyalists may feel good about that, but it's a competitive nonissue on today's playing field.

Unfortunately, most of Apple's new technology won't help it here. Its QuickTime VR, virtual reality for the masses, won't appeal to many business users until we can fly through three-dimensional spreadsheets. HyperCard could become the dominant Web page creation tool, but Release 2.3 won't cut it. IBM is doing a little better by opting to push OS/2 Warp connectivity, but it still isn't making the case that its advantages matter to most of us.

In other words: Truth in advertising won't help you. Stop preaching to the choir. Wake up and smell the real world. And good luck.

Mallach is chairman of the manufacturing and MIS department at the University of Massachusetts at Lowell. He also is a consultant on IS strategies.

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WINPROBE4 DIAGNOSES BUT DOESN'T CURE, 41
MICROSOFT'S BACKOFFICE LOGO PLAN BACKFIRES, 49

Desktop Computing

PCs AND SOFTWARE • PORTABLE COMPUTERS

IBM befriends NT

OS/2 takes backseat to popular software

By Craig Stedman

Rather than continue trying to bury Windows NT, IBM has decided to praise it.

In January, IBM clamped a cone of silence over its plans for marketing Windows NT software in order to make a last-gasp effort to salvage OS/2 as a viable competitor to Microsoft Corp.'s Windows juggernaut. But IBM has apparently come to the conclusion that if you can't beat 'em, you might as well join everybody else in supporting the operating system that matters most to customers.

Two months ago, IBM insiders said the company's software units had been told to move with due haste to develop Windows NT versions of their products [CW, Sept. 25]. The fruits of that directive are starting to become apparent, and most of IBM's key software should be available on NT by the end of next year (see chart, page 45).

Windows NT is now on the same priority level as OS/2 and Unix for future software releases, IBM officials said. In fact, NT may well be supported before OS/2 in some cases.

"You can't discount doing things differently in the future than you have in the past," said Geoff Sharman, a strategy and marketing consultant for IBM's CICS transaction processing software.

Operating systems

No surprise

The prospect of OS/2 playing second fiddle to Windows NT didn't thrill loyal IBM customers with big OS/2 installations. But they said IBM's new stance isn't a shock given the relative standings of the two operating systems in the marketplace.

"I'm not going to tell you that I wouldn't like to see OS/2 products first, but I'll just live with it," said Linda Mainord, director of special technology projects at the Memphis City Schools in Tennessee. Mainord is also the immediate past president of the IBM-oriented Guide International Corp. user group.

"If I were in [IBM's] shoes, I would probably have made the same decision" to elevate NT, she added. "But I don't think they're going to forsake and abandon the customers who stepped out there" and committed to OS/2. The Memphis schools run the IBM operating system on the desktop and as a network server, and Mainord said there are plans to use the OS/2 versions of CICS and the DB2 relational database in future client/server applications.

Similarly, "I won't like it if I'm waiting for enhancements [to OS/2-based software], but I'm sure that's going to happen. You've got to go where the market is," said Virgil Pittman, senior vice president of information systems at Fireman's Fund Insurance Co. in Novato, Calif. Nonetheless, Pittman said he believes IBM's assurances that it remains committed to OS/2.

Big-iron users weigh in

Other mainframe customers with less of an investment in OS/2 said they stand to benefit from IBM's embrace of Windows NT. Increasing the range of servers that run CICS, DB2 and other mainframe-derived products should make it easier to develop distributed applications that include big-iron boxes, they said.

"My take on it is that if IBM is

IBM, *page 45*

NT platform push just months away

By Jaikumar Vijayan

Windows 95 may be where the volumes are, but in the commercial high-end PC space, at least, vendors are accelerating efforts to offer platforms for Microsoft Corp.'s Windows NT to meet growing customer demand.

This interest, combined with emerging technology designed to take better advantage of 32-bit application environments, will result in a virtual flood of relatively low-cost NT-based desktop PCs and workstations next year, observers said.

Prices start at about $4,900 for an NT system; a standard low-end PC today starts at around $2,000 for a 100-MHz system based on the Intel Corp. Pentium.

The contenders

These vendors and others have recently added to their Windows NT portfolios: Hewlett-Packard Co., with its HP Vectra XU 6/150 PC and the HP Vectra VT 6/150 PC; IBM, with its PC 300; AST Research, Inc., with its new Bravo and Premmia GX models; and Dell Computer Corp., with its new OptiPlex commercial systems.

Users are looking forward to these wares. "Windows NT is a more robust, secure and reliable environment" than Win-

Windows NT, *page 45*

The next generation

A sample of Windows NT-based platforms

Hewlett-Packard's HP Vectra XU 6/150 PC
- 150-MHz Pentium Pro
- Dual-processor-capable
- 16M to 256M bytes of RAM
- Six expansion slots
- Integrated PC-based 10Base-T/100VG AnyLAN card
- Matrox Millennium graphics accelerator, video and 3D accelerator

IBM's PC 300
- 150-MHz Pentium Pro
- 16M to 128M bytes of RAM
- 1.2G-byte hard disk
- Six expansion slots
- Matrox Millennium graphics accelerator, six-speed CD-ROM drive
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COMPUTERWORLD

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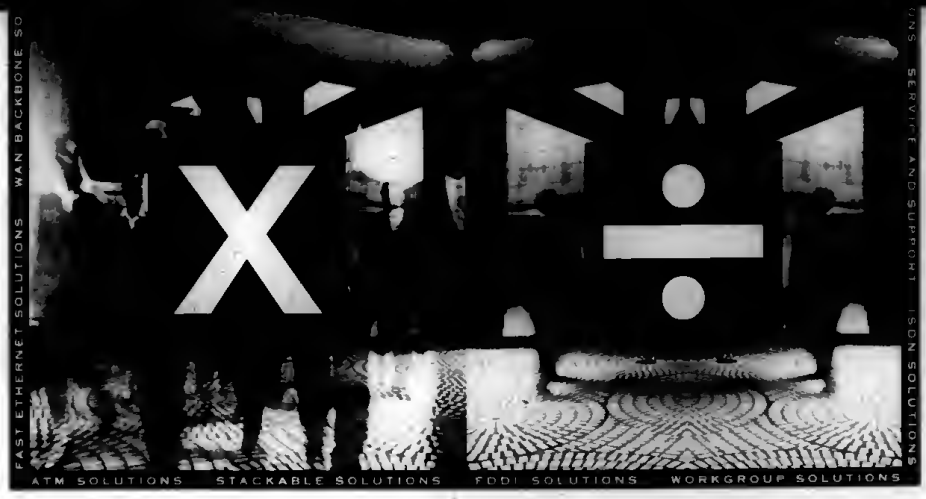

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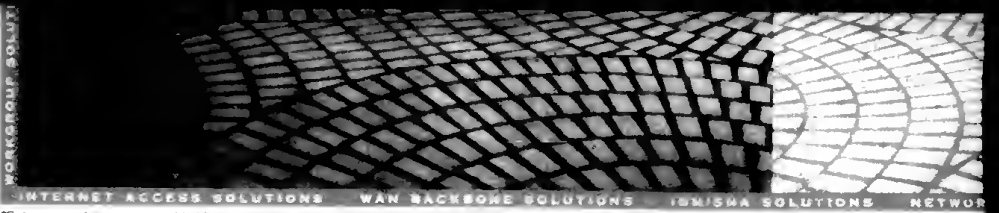

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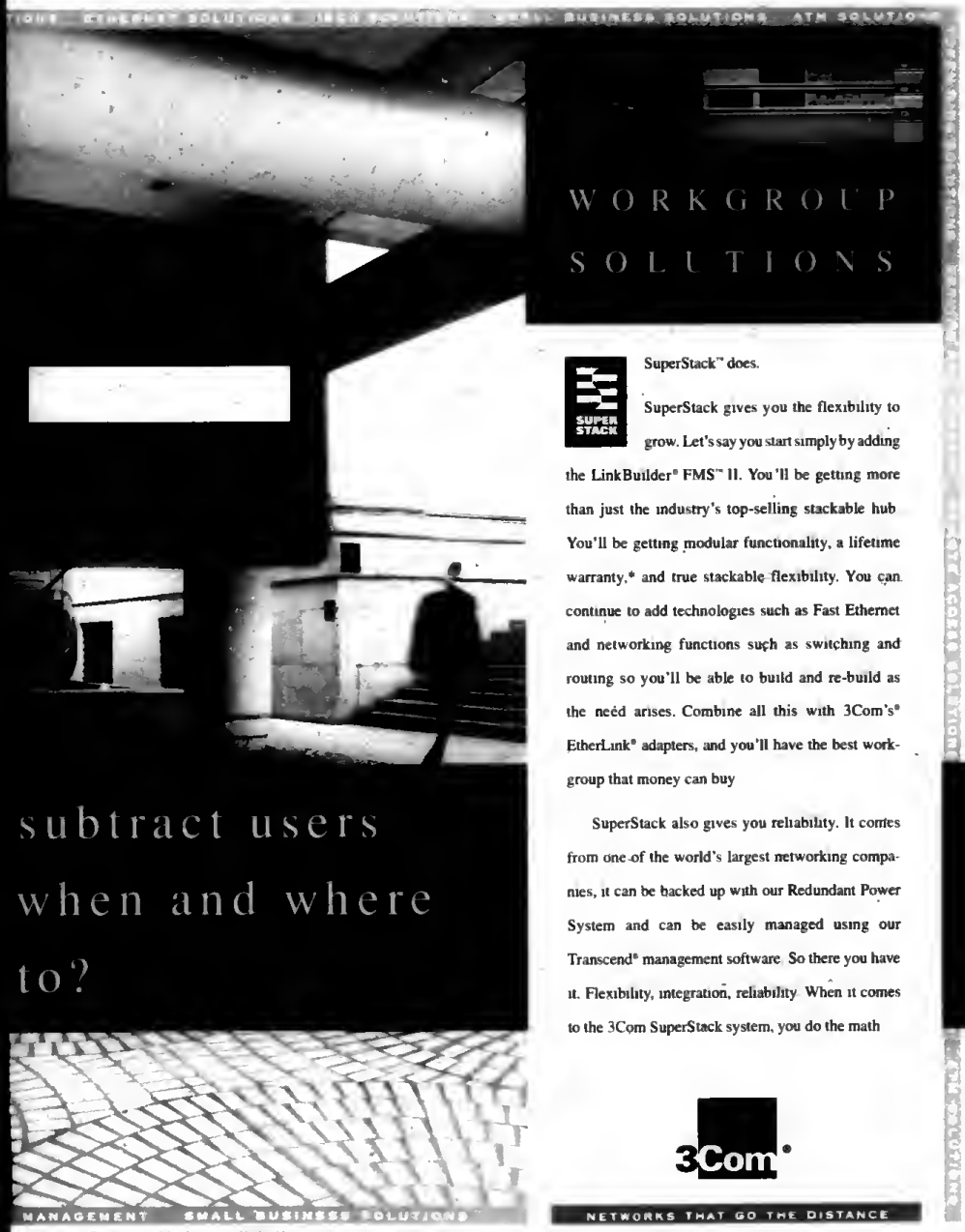

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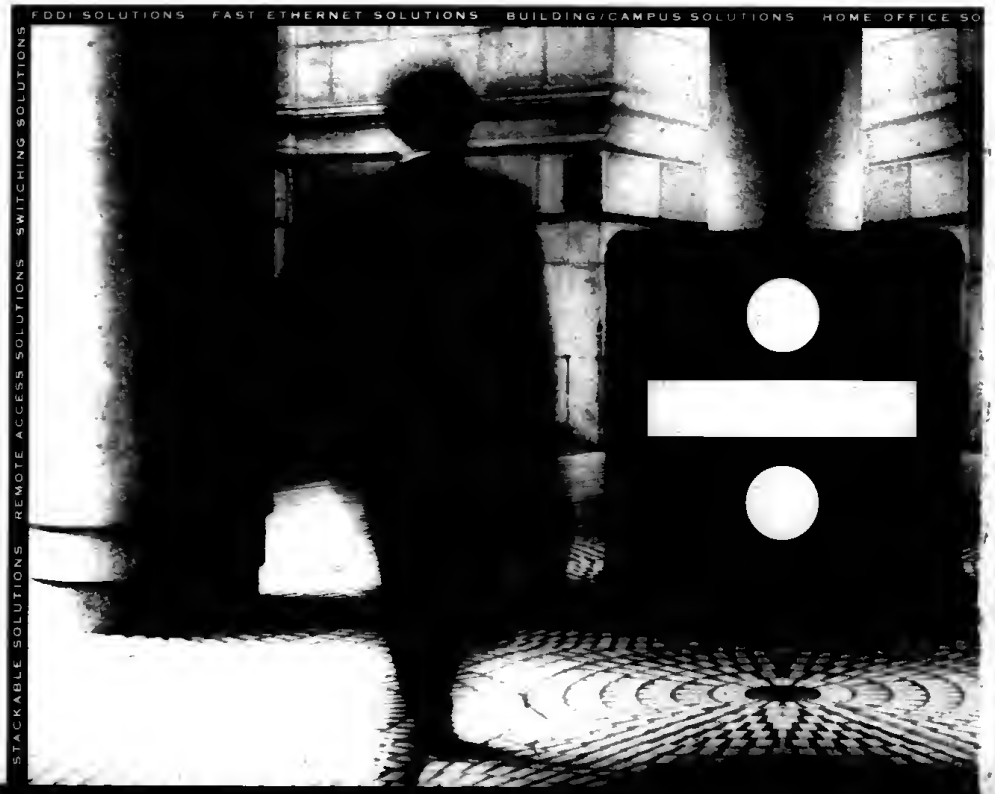

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Winprobe4 diagnoses but doesn't cure

By Howard Millman

Quarterdeck Corp.'s Winprobe4, an encyclopedic analysis and diagnostic utility for Windows, could be called *Gray's Anatomy* for Windows Everything, and then some, that you could want to know about your system's internals and configuration is laid bare.

But just as reading *Gray's* doesn't cure what ails you, Winprobe is much better at finding systems problems than actually fixing them.

REVIEW

The good stuff

Among the program's highlights are its 200 or so diagnostic tests and comprehensive reports on the computer's audio, video, memory and storage systems. In addition, Winprobe's Installation Wizard lists available and used Interrupt Requests, ROM addresses and Direct Memory Access channels. This detailed information can be helpful when installing non-Plug-and-Play expansion cards or hardware devices.

The product's network-specific diagnostics list straightforward information such as networked disk drives, printers and the network operating system.

Winprobe offers excellent diagnostics and advice but nevertheless suffers from substantial shortcomings.

For example, it omits benchmarks for CPU performance and hard drive and data throughput speeds. And Winprobe diagnostics generally target Microsoft Corp. Windows 3.x and Windows for Workgroups users. The relatively few features specific to Windows 95 include a customized Registry editor and only a small percentage of the 300 or so generic tune-up tips.

Winprobe also offers little in the way of the problem fixes provided by Norton Utilities, its higher horsepower competitor from Symantec Corp.. The product's few corrective features include a Memory Optimizer, which reorganizes memory in a fashion similar to what a disk defragmenter does for a hard drive, and a System Resource Manager.

Quarterdeck describes the omission of corrective features as a safety measure, claiming it prevents inexperienced users from mucking around in restricted areas. It's ironic, then, that Winprobe provides easy access to Win 95's Registry, an area where even one ill-advised keystroke can cause a digital disaster.

Structurally, the utility's attractive, if somewhat busy, interface has two components. The System Panel displays a mind-boggling assortment of conditions. They include interrupt latency, Windows memory and an assortment of conventional information such as the CPU type and hard-drive specifications.

The good, the bad

Winprobe4 users must weigh the following:

Pros	Cons
• Comprehensive	• Features weighted toward Windows 3.x users
• Easy to use	• Inability to repair few of the problems it finds
• Inexpensive ($39.95)	• Limited benchmarking capability

Panel pluses, minuses

A smaller pane, Status Panel, displays a dynamic graph showing systems utilization, available RAM, systems resources and systems load. Because the Status Panel contains data that you might want to continuously monitor, it can be set to remain in the topmost window on the screen. Unfortunately, its fixed size consumes one-eighth of the screen's precious real estate.

Quarterdeck attempts to at least partially compensate for Winprobe's inability to work even simple fixes by bundling in an abbreviated version of its CleanSweep uninstaller. In addition, Winprobe includes another freebie, Quarterdeck's Mosaic browser on CD-ROM.

At $39.95, Winprobe provides easy access to the depths of your system. But while the product's diagnostics can highlight problems, its inability to help repair them limits its usefulness.

Millman operates the Data System Services Group, a networking consultancy in Croton, N.Y. He can be reached at hmillman@mcimail.com

Reporter's Notebook

Celebrity Comdex sightings...

Comdex usually gets a mention on TV news since it's the biggest computer trade show in the nation. This year it warranted live coverage from NBC anchorman Tom Brokaw and his *Nightly News* staff.

Tonight Show host and Windows 95 launch guy Jay Leno also brought his show to Vegas. Leno wasn't spotted on the show floor, but then again Bill Gates wasn't seen sitting on the couch next to him, either.

Las Vegas may be home to fashion-challenged tennis bad boy Andre Agassi, but Andre and his pretty baby Brooke Shields were nowhere to be found. But three-time Wimbledon champ Pete Sampras was spotted strolling around the show floor.

I'll take Gerstner for $400, Alex

It may lack the cachet of being an answer in *The New York Times* crossword puzzle, but *Jeopardy* featured this "answer" in the category "1995" during Comdex week: "Lotus Development Corp. agreed to be taken over by this computer giant." (The "question" was, "Who is IBM?") Sources said Jim Manzi, Lotus' recently departed CEO, is disputing the outcome of the game because of the word "agreed."

Celebrity bashes

It's no longer enough to get a booth and promote your wares; you've got to give away hats, mugs, pens or beer cozies — or get a big-name celebrity to headline your party. The Panda Project flew industry influencers to the Palm Springs, Calif., home of Elizabeth Taylor for an evening of fine dining — sans Liz and her soon-to-be-ex-husband Larry Fortensky. Entertainment was provided by *Saturday Night Live* alum Dana Carvey. Carvey is no newcomer to dealing with techies; his brother Brad, who provided the inspiration for Garth of *Wayne's World* fame, heads up a graphics company called Play.

And, not be outdone, Fujitsu hosted an extravaganza for more than 2,000 people at the MGM Grand Theater. The music fest featured the big-haired Lyle Lovett. — *Lisa Picarille*

Briefs

HP/Starlight team

Hewlett-Packard Co. has announced a partnership with Starlight Networks, Inc. The deal will put Starlight's StarWorks networked video server software on HP's PC-based NetServers and HP 9000 Unix servers. Last week, HP revealed its first product would be a NetServer running Starlight's StarWare NetWare Loadable Module. It will be priced at $28,000 for a system supporting 50 concurrent users.

Show announced

The Interactive Multimedia Association (IMA), a 400-member group of multimedia development companies, has announced a new industry show, dubbed the IMA Expo, to be held next September in New York. The show will focus on CD-ROM, on-line, broadband, enterprise network and Internet delivery systems for multimedia.

IBM begins to consider alternative to Butterfly

By Rob Guth and Terho Uimonen

LAS VEGAS

Design challenges and user preferences for higher performance levels and larger screens are forcing IBM to consider alternatives to the ThinkPad 701 Butterfly ultraportable notebook line, IBM officials recently said.

IBM hasn't decided yet whether to phase out the current design, which features a keyboard that expands to full size when the unit opens. Production will continue at least through the second quarter of next year, officials said.

But size limitations — the 701 has a footprint of 9.7 by 7.9 inches, markedly smaller than that of a standard A4-size notebook — make it difficult, if not impossible, to support the improvements that users are demanding, according to IBM officials.

Meanwhile, prices for active-matrix screens are falling, making it possible to offer larger screens.

As a result, "at the same time while we're producing, ordering parts and keeping the 701 drumbeat going, my development team is looking at other ways of doing ultraportables," said Joseph Formichelli, general manager of mobile computing at IBM PC Co.

Such models could feature 12-in. screens in standard ultrathin, 4-pound form factors with Intel Corp. Pentium and Pentium-class processors and lithium-ion batteries, he added. The current model sports a 10.4-in. screen.

To accommodate a Pentium in the Butterfly, IBM would have to make the unit thicker than its current 1.7-in. height, challenging the trend toward slimmer notebooks, officials said. That thickness restriction might limit the 701's performance to the current 75-MHz 486DX4 level.

"I could tell you right now there is an equal probability that [the 701] is going to exist or not exist next June," Formichelli said. "I'm going to have both ready for which way this market goes — the Butterfly form factor or a slim one."

Guth and Uimonen are correspondents at the IDG News Service's Tokyo bureau.

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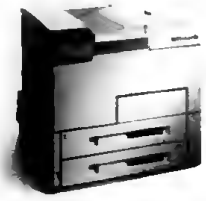

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Briefs

No shortage of batteries

A fire in the Japanese lithium ion battery plant for Sony Corp. has some observers wondering whether there will be a battery shortage. Such a shortage could affect shipments of portable computers. Sony officials, however, have said there will not be a shortage, although the fire did stop battery production. A stoppage could adversely affect smaller companies, which normally do not keep a surplus on hand.

3-D apps take off, top $1B in sales

Three-dimensional graphics applications are emerging as the driving force in the multimedia market, according to market researcher Dataquest, Inc. The 3-D market sector has far exceeded even the most optimistic expectations, with $1 billion in specialized microprocessor sales to date.

The desktop video market, in contrast, has failed to take hold due to high costs and lack of real applications, according to a recent Dataquest report.

Filling an NT vessel

A status report on IBM's alignment of software for Microsoft's Windows NT

Product	Availability
CICS transaction monitor	Shipping now
DB2 relational database	Late this month
DataPropagator replication tool	Q1 1996
DataHub data administration tools	Q2 1996
MQSeries messaging middleware	Q1 1996
VisualAge development tool	
•C++ version	Now in beta
•Smalltalk version	Beta, Q1 1996
•Cobol version	Late 1996
SystemView systems management tools	1996
Netfinity management tool for PC servers	Unannounced

IBM

CONTINUED FROM PAGE 39

going to run software like CICS and DB2 on different platforms, that gives me more flexibility," said John Chapman, lead information architect at Amoco Corp. in Chicago. Amoco runs some custom OS/2 applications but is now standardizing its desktops on Windows, he added.

IBM's change of heart began after its software units got their own profit-and-loss responsibilities last summer, analysts said. The IBM units now "have to have the mentality of a software vendor and [support] all the platforms that customers require," agreed Lilia Tsalalikhin, manager of object-oriented marketing at IBM. "I don't think we had that mentality before."

The difference is striking, users said.

"I saw a lot of presentations [on CICS] where they weren't allowed to even put NT on their slides," said Jim Langton, control systems manager at Long Island Lighting Co. in Hicksville, N.Y. "Now it almost appears to me that IBM made [the CICS unit] a separate company and told them to make money any way they can."

Windows NT

CONTINUED FROM PAGE 39

dows 95, said Robert Cosgrove, information systems director at Alcoa in Pittsburgh. The company is rolling out a massive global client/server implementation involving HP's Intel-based servers and Windows NT.

And hardware vendors claim there are a lot more users like this who are betting that Windows NT platforms will garner substantial sales in the next few years.

"It is almost as if the arrival of Windows 95 is forcing a lot of people" to make a choice to upgrade, said Laura Rayhin, director of product marketing at AST in Irvine, Calif. "And what we are seeing is that a lot of our large commercial accounts are choosing NT" over Windows 95, she said.

More choices

Making the decision to migrate to Windows NT also becomes easier with the increased availability of hardware that can take better advantage of the 32-bit operating system, analysts said.

Performance boosters include Intel's recently released 32-bit Pentium Pro chip and peripherals such as Fast and Ultra Fast SCSI drives and controllers. Other enhancements include high-performance graphics capabilities, more memory and bigger disk space.

In the short term, at least, Windows NT-based Pentium Pro workstations will play well in number-crunching applications at financial institutions and in graphics-intensive applications. And they will compete against the traditional workstation vendors, analysts predict. "There has been a lot of discussion in the past about how PC vendors would battle workstations. . . . This time, though, they have some good ammo," said Bruce Stephen, an analyst at International Data Corp. in Framingham, Mass.

The only differences between these workstations and the higher-end Pentium Pro-based servers — due out in the second half of 1996 — will be the symmetrical multiprocessing, higher storage capacities and greater network management capabilities that the servers will offer, observers said.

"I find these developments really interesting," said Thomas Balzarini, enterprise network specialist at Associated Grocers, Inc. in Seattle.

"We might look at one of these personal workstations ourselves. We are doing very complex Visual Basic applications, and we need more horsepower and throughput on the desktop. This could be great," he said.

Such systems will make sense for users in certain application areas but have little applicability within his organization, said Stephen Beitler, national manager of financial processes and systems at Sears Merchandise Group in Hoffman Estates, Ill. He said he has Pentium-based systems already and doesn't need the new systems right now for any applications.

Now and then

Some key differences between the up-and-coming crop of personal workstations and today's high-end PCs include the following:

- Better system throughput with integrated, high-speed Fast/Wide and Ultra-SCSI drives and controllers in place of the integrated drive electronics (IDE) and Extended IDE controllers on most PCs.
- Faster network connectivity, via an integrated Peripheral Component Interconnect (PCI)-based 10Base-T/100VG AnyLAN interface. Most standard PCs have a 32-bit PCI Ethernet interface.
- Between 12 and 15 expansion slots for PCI and Industry Standard Architecture devices compared with a maximum of eight on most standard PCs.
- Other performance-boosting technologies heading for this space include the Universal Serial Bus (USB) and Digital Signal Processing (DSP). USB is a technology expected next year that will make it much easier to connect peripherals. DSP boosts processor performance by off-loading intensive tasks from the CPU to a special chip. — *Jaikumar Vijayan*

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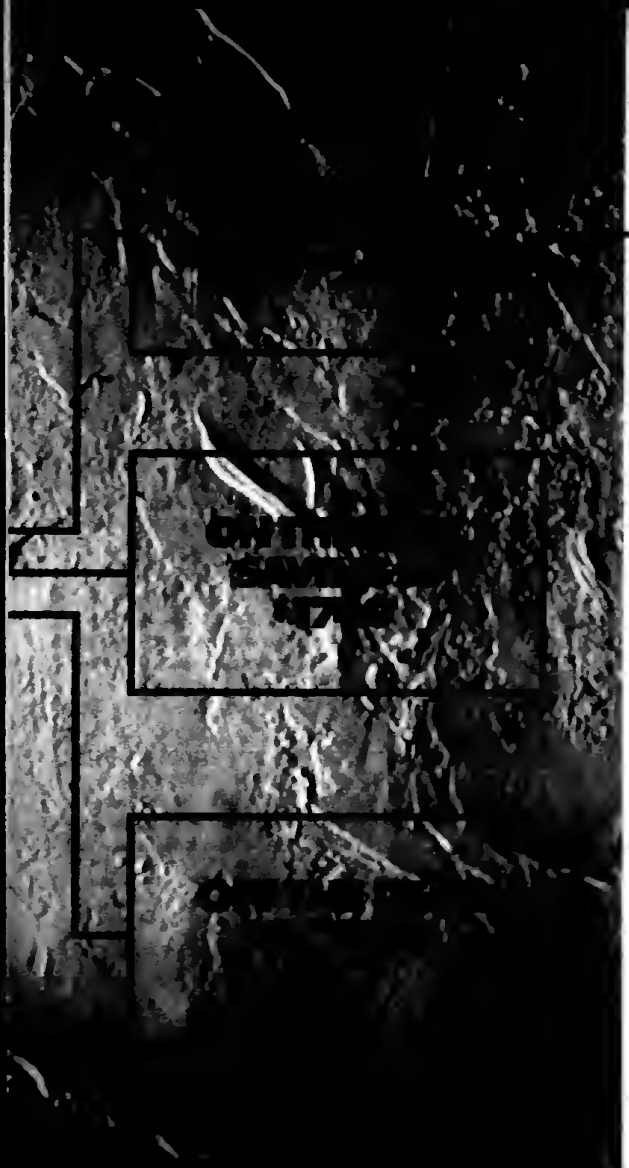

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Aartronics Corp. has unveiled LogiScan, models 2000 and 1000, PC diagnostic tools.

According to the Denver firm, LogiScan is a portable diagnostic product that analyzes PC system architectures. It isolates failures on product boards, subsystems and components without requiring programming knowledge.

LogiScan 2000 includes a 486-based computer, a color LCD panel, an adapter pad and software. LogiScan 1000 uses the same base hardware and software but doesn't include the computer.

Pricing for LogiScan 2000 starts at $9,950, pricing for LogiScan 1000 starts at $4,950.

▶ *Aartronics*
(303) 573-3666

Fractal Design Corp. has rolled out Fractal Design Painter 4, a paint and image-editing program.

According to the Aptos, Calif., company, Painter 4 is a painting and drawing program that lets users collaboratively create artwork over LANs and the Internet. It includes drawing tools that work with its bit-map editing tools to create vector objects that can be edited using bezier editing tools. It also lets users create Image Maps for use in World Wide Web page designs.

Painter's networking features let multiple users log on to a single artwork session and take turns using any of Painter's brushes, tools or effects on the artwork. It has features for multiple floating sections and frame-by-frame animation. It also includes a mosaic tool that lets users create mosaics by "painting" with tiles on blank canvases or over scanned photographs.

Painter 4 is available for Apple Computer, Inc.'s Macintosh and Power Macintosh. Versions for Microsoft Corp.'s Windows 3.1 and Windows 95 will be available in December. It costs $549.

▶ *Fractal Design*
(408) 688-5300

Interlink Electronics Corp. has introduced DeskStick, a desktop pointing device.

According to the Camarillo, Calif., company, DeskStick uses keyboard joystick and pressure pointing technology to deliver 360-degree cursor control.

It has a low-profile, symmetrical design to accommodate right- and left-handed users and increases available desk space by as much as 70%.

DeskStick lets users move the cursor with a fingertip joystick, eliminating side-to-side hand motions. It is a fully Microsoft Corp.-compatible pointing device, using either standard serial or PS/2 mouse ports.

DeskStick costs $60.

▶ *Interlink Electronics*
(805) 484-8855

Toshiba America Electronics Components, Inc. has introduced the Solid State Floppy Disk Card.

According to the Irvine, Calif., company, the product combines the versatility of floppy disks with the size and memory capacity advantages offered by flash memory.

The Solid State Floppy Disk Card is a floppy-shaped memory card that incorporates 16M-bit flash electrically erasable programmable read-only memory. Unlike standard flash memory, the Solid State Floppy Disk Card is in a package that can be handled, which lets users interchange it between systems.

Pricing for the Solid State Floppy Disk Card starts at $40. An adapter ($75) lets users insert the Solid State Floppy Disk card in PCI expansion slots.

▶ *Toshiba America Electronics Components*
(714) 455-2000

Savin Corp. has introduced the 9910DP multifunctional digital system.

According to the Stamford, Conn., company, the 9910DP combines a digital copier, plain-paper fax machine, laser printer and desktop scanner in one machine.

The copier feature reproduces 10 copies per minute at 400 dot/in. resolution. It has five reduction modes, four enlargement modes and holds 250 pages. The fax machine features include a scanning speed of five seconds per page and book scanning. It also has a dual-access memory that lets users scan and store documents in memory while the machine is printing or receive a fax while another is being scanned into memory.

The laser printer delivers 10 pages per minute at 600 dot/in. resolution. It has 1M byte of memory that can be expanded to 6M bytes. The 9910DP also functions as a 200 dot/in. scanner, letting users scan documents directly into PC memory or send faxes directly from the PC.

The 9910DP costs $3,595.

▶ *Savin*
(203) 967-5000

Microsoft's BackOffice logo deal may backfire

By Stuart J. Johnston

At Comdex/Fall '95, Microsoft Corp. announced a program for branding third-party products that have been tested to work with the Windows NT BackOffice server suite. But the project may miss the mark with users.

The concept, which is similar to one Microsoft already has for Windows 95 products, lets software vendors with compliant applications mark their products with a logo that indicates their products are compatible with BackOffice.

BackOffice work

These products are expected to be the first to qualify for Microsoft's BackOffice-compatible logo

Company	Product
Arcada	Arcada Backup Exec
Computer Associates	CA-Unicenter
Digital	AlphaServer, Prioris and Personal Workstations
Delrina	FormFlow 1.1
Gupta	SQLWindows for SQLServer 6
Hewlett-Packard	NetServer LS 5/100
Saros	Saros Document Server for BackOffice
Wall Data	Rumba Office for SNA Server 2.0
Wang	Open/Image and Open/Workflow 3.0

What's the point?

But some users and analysts don't see much value in the idea.

"Branding is good for consumer products ... but I can't think of any good reason to look for branding on BackOffice applications," said Bill Carrigan, technology adviser at Pacific Enterprises Corp., the parent company of Southern California Gas Co. in Los Angeles. "Part of the reason is that the BackOffice is so mission-critical that you want your own people to check it" for compatibility, he said.

"The vendors should be smart enough to tell you" whether their products integrate well with BackOffice, said Michael A. Goulde, a senior consultant at Patricia Seybold Group in Boston.

Still, a slew of independent software vendors already have jumped on board to get their products tested and certified as BackOffice-compatible (see chart).

Microsoft executives insist that testing and branding products that work with BackOffice will benefit users.

"If I buy a number of applications from different vendors, are they going to work together or not?" asked Rich Tong, general manager for corporate and network systems at Microsoft.

If a product is certified for the logo, "It operates like it's a part of the [BackOffice] family, uses the same administration tools, puts items into the NT event log and goes through NT's security system," he explained.

Logo means nothing

However, not even independent software vendors with products for BackOffice see a burning need for the logo.

"Nobody's come to me and asked, 'Are you BackOffice-compatible?'" said Bill Cornfield, president of The Windows Support Group, a New York-based NT consultancy and an independent software vendor with products that work with BackOffice.

The BackOffice server suite was introduced in September 1994. It includes NT Server, the SQL Server database, Systems Management Server (SMS) for software inventorying and distribution, the Microsoft Mail Server and SNA Server for mainframe communications.

Testing for the program will be done by VeriTest, Inc. in Santa Monica, Calif. VeriTest also certifies products for the Windows 95-compatible and Microsoft Office-compatible logo programs.

OnDemand adds NT support

Beefed-up WinInstall to ship this month

By Cheryl Gerber

OnDemand Software, Inc. recently added Microsoft Corp. Windows NT services to the final beta release of its software distribution program.

The company had planned to deliver its WinInstall 5.1 software with the ability to install only Microsoft's Windows 95 applications.

But OnDemand added the NT feature last month after at least one beta user made it clear that the addition of NT services was essential.

The final beta release will ship today and the finished product will ship at the end of the month.

Version 5.1 needed the ability to distribute software to NT users even when they weren't logged on, according to Eric Gentry, systems engineer at O/E Systems, Inc., a systems integrator in Chicago.

Gentry said he is interested in using WinInstall 5.1 to distribute a customized application in a wide-area network of NT servers and workstations at a Fortune 500 client.

The final beta release of WinInstall 5.1 will run as an NT service, similar to a Novell, Inc. NetWare Loadable Module, according to Jack Palmer, vice president of marketing at OnDemand Software in Naples, Fla. WinInstall 5.1 also can make 32-bit registry updates and support long file names, he added.

When used with Microsoft's Systems Management Server (SMS), WinInstall 5.1 can work with the audit information in an SMS database to let an administrator customize and then automatically set up thousands of desktops to look the same way.

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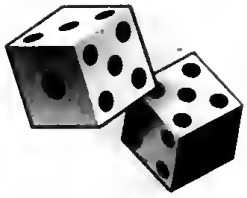

Components can go with the flow

By Tim Ouellette

Clark County's gamble with workflow paid off.

The county, home of Las Vegas, used Action Technologies, Inc.'s workflow engine to streamline its business licensing process. Workflow, an important part of an imaging system, routes images and associated data around a company for review, action or approval.

"Using Action let us take Visual Basic and customize the screens," said Kelly Cartron, management analyst at Clark County's Department of Business Licenses in Las Vegas. With the number of application programming interfaces that Alameda, Calif.-based Action provides, "we had more flexibility to make Visual Basic work where we wanted it to work," he added.

Workflow

Action's strategy is for Action workflow software to become the workflow component of choice in large imaging and document management installations. The company plans to make that happen by making the software compatible with other component-based products such as LaserData, Inc.'s storage subsystem, Watermark Software, Inc.'s image management system and PC Docs, Inc.'s document management software.

Routing and approving the 360-plus categories of license applications, all with different fee structures and requirements, has been cut down from 120 days to 45, Cartron said. A checklist made in Novell, Inc.'s WordPerfect for each license has been created. This list launches an Action workflow that automatically routes requests around the department for approval.

"It makes a good audit track. And having a license checklist has standardized the way we do business," Cartron said. Without all the paperwork floating around the office, workers don't lose files anymore — and this cuts down on the delay in issuing licenses, he said.

Notes lays foundation for real estate firm

By Mitch Wagner

At real estate investor CNL Group, Inc., Notes is the foundation of its only enterprise system.

The 200-person firm uses Lotus Development Corp.'s Notes for electronic mail, to drum up new business and to keep track of about 1,000 properties nationwide in which it has investments. "We've got a real need to share information quickly," said Ronald Murphy, vice president of information systems at the Orlando, Fla., firm.

The company gives Notes a full-impact workout. Its employees maintain about 50 separate Notes databases, including financial information, word processing documents and an imaging library that includes photos of the properties. Other databases contain contracts and financial records.

Notes helps CNL track the properties' needs for routine maintenance, including tax and insurance payments and inspections. Notes also helps company salespeople track investment prospects — everything from the initial lead to final closing.

Compare and contrast

CNL is similar to many other financial service companies that use Notes extensively, including Price Waterhouse and The Chase Manhattan Bank NA, observers said. But CNL is rare in that it uses Notes as a backbone application, accord-

Notes, *page 54*

"We've got a real need to share information quickly."

— Ronald Murphy, vice president of IS, CNL Group

Sun releases Solaris 2.5

System tuned for higher server performance

Solaris 2.5 showcase

- Runs on Sun SPARC, Intel and PowerPC
- Remote log-in performance improved 1.5 times over Solaris 2.4
- Network File System performance improved up to 30%
- Supports up to 1.5T-byte database
- Supports Common Desktop Environment as an option
- Improved graphics and rendering performance

By Jean S. Bozman
MOUNTAIN VIEW, CALIF.

Sun Microsystems, Inc.'s Solaris 2.5 Unix operating system will fuel the firm's drive into high-end 64-bit workstations, Internet servers and workgroup servers. But for users, it also addresses long-held concerns about the performance of Unix servers that handle large numbers of log-ins and heavy network traffic.

Sun's SunSoft, Inc. division announced Solaris 2.5 just a week before Sun unveiled its UltraSPARC workstations on Nov. 7. This latest Unix version runs on both new and older Sun systems and on PCs based on Intel Corp. chips. It will be shipped for PowerPC-based systems from IBM and Motorola, Inc. next year.

One group of users will have to use Solaris 2.5 — those who buy the UltraSPARC 64-bit workstations.

Many of Solaris 2.5's features have been tuned for higher server performance and improved networking for Sun's new Internet products [see chart]. New algorithms also will speed database applications on overtaxed Sun servers, the company said.

"We're concerned about performance on the heavily loaded machines," said Charles Hedrick, technical director at Rutgers University's computing services group in New Brunswick, N.J.

During the past few months, Hedrick tried beta copies of Solaris 2.5 on SPARCstation 10 workstations that support 80 to 100 users who access Unix applications. "We certainly noticed a difference in reliability," he said. "We had a number of problems with 2.4 that we don't have with 2.5."

Speed was also noticeably improved, he said.

Industry analysts said Solaris 2.5 moved some add-on functions that control user log-ins directly into the heart of the Unix operating system — the kernel. For the user "rlogin" and "Telnet" time-sharing, these kernel features nearly doubled performance, said Tony Iams, a research analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y. That means more users can log on simultaneously — a feature requested at user group meetings.

Solaris 2.5's improved built-in compatibility with older SunOS applications will encourage users to migrate from aging systems. This built-in compatibility will let many older applications run as is, Iams

Solaris 2.5, *page 54*

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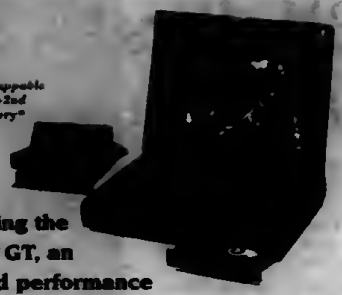

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IBM offers LAN management menu

By Patrick Dryden
LAS VEGAS

Can't afford to keep experienced LAN support staff at branch offices and small businesses? You could hire IBM to remotely handle basic management and selected tasks ranging from backup to performance monitoring.

That was the pitch at Comdex/Fall '95 recently as IBM lowered its outsourcing sights to target smaller organizations that want to unload some or all of their networking chores.

With the introduction of LAN Management • Services, IBM joined the ranks of "out-taskers" offering to take over specific jobs for a fixed monthly price. Out-taskers can free small business owners or struggling information systems departments from routine and complex network management responsibilities so they can deal with business issues.

Expected success

IBM's LAN effort, more narrow in focus than the Network Station Manager program launched earlier this year, should succeed, said Jeff Kaplan, director of Dataquest, Inc.'s Worldwide Services Group in Westboro, Mass.

The strategy "fits IBM's new efforts to deliver products and services for the network-centric world," Kaplan said.

"We've only offered reactive services in the past, except for those who completely outsourced to us," said Jeff Artis, IBM availability services brand executive.

Major outsourcers and minor LAN specialists offer similar services, but IBM claims a competitive edge because of its tools, selection and offer of per-seat-per-month pricing instead of pricing by hour or incident.

IBM installs for each customer at least one PC equipped with a suite of management software and a demand-dial link to its control center. Those with multiple sites can funnel monitoring and remote-control traffic across their wide-area network to a single IBM management server, Artis said.

Cost is the key issue when considering outsourcing services from IBM and others, said Dan Bent, chief information officer at Benefit Systems, Inc., an insurance benefits administrator in Indianapolis.

"Outsourcing one or more management jobs is worthwhile if the cost is less than what it takes to hire and keep my support staff," Bent said. "But we haven't had enough problems to warrant any such service."

Pilot customers with LANs of 45 to 1,200 users evaluated LAN Management Services for six months, Artis said. However, none has signed a contract.

Users get a chilly look at mainframe data

By Tim Ouellette

A group of software vendors is working to let users more easily catch COLD.

Computer Output to Laser Disk (COLD) software indexes and archives traditional mainframe reports to optical disc, usually write-once read-many (WORM). Users then can view these disk-based reports online and extract data.

COLD

The vendor group, dubbed the COLD Consortium, is developing a single COLD interface for all its COLD back-end products. Analysts agree that the weakest part of a client/server COLD package always has been the user interface.

"The interfaces are usually designed with the IS person in mind," said Scott McCready, an analyst at International Data Corp. in Framingham, Mass. "Now more and more people accessing mainframe data in COLD reports are people used to using Windows," he added (see chart).

The COLD interface will be added to Watermark Software, Inc.'s Windows-based image viewing software, which will let users view and launch image files, text documents and COLD reports. Watermark is a Burlington, Mass., unit of FileNet Corp. in Costa Mesa, Calif.

COLD vendors, in general, are trying to link their software to regular imaging systems, and this is a fast way for them to do it, said Mason Grigsby, president of Output Strategies, Inc., a San Francisco consultancy. A few COLD vendors already have provided imaging linked with COLD.

One user had considered using Watermark's viewer as a front end to its FileNet COLD software. "We were ready to build an interface on our own," until FileNet purchased Watermark, said Steve Weinstein, vice president and project manager at Bankers Trust Co. in New York.

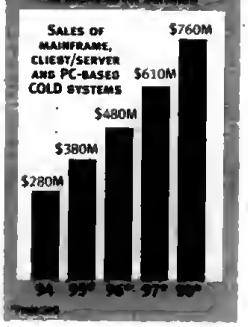
Even with the interface issues, the fast return on investment with COLD software is evident to many users, who then won't have to deal with reams of mainframe report printouts or thousands of microfiche cards.

"Our system pretty much paid for itself in little over a quarter, and the volume was massive," said Eileen Spellman, manager of financial systems at ActMedia, Inc. The Norwalk, Conn., coupon company archived its product data and payroll information for more than 16,000 employees on Computron Software, Inc.'s COLD software.

COLD Consortium vendors include the following: Watermark, Computron, Greenbar Software, Microbank Software, Inc. and Icon Consulting Group, Inc.

Users hot on COLD

Computer Output to Laser Disk (COLD) is catching on thanks, in part, to the influx of client/server software.



Source: Output Strategies, Inc., San Francisco

Notes

CONTINUED FROM PAGE 51

ing to Walter Kuleck, managing director at Technology Enterprises, Inc., a Cleveland consultancy.

"In most outfits, you've got a legacy, which means you've got tremendous inertia," he said. "Lotus gets layered in [and] the legacy apps feed into Notes. It takes a while for the evolution to occur, if it happens at all."

But, in fact, Notes is the only enterprise application CNL has used. The 20-year-old company began standardizing on desktop PCs eight years ago but used them only for personal-productivity applications. Property tracking was managed on paper and used a specialized DOS-based real estate application.

CNL licensed Notes in mid-1993 and planned to use it only as an image-management system. The alternatives at the time were microfiche or high-priced dedicated systems that cost hundreds of thousands of dollars, Murphy said.

Now, CNL has deployed mapping software from MapInfo Corp in Troy, N.Y., to link databases. The software provides maps of where properties are located, and users can click on a geographic region and find data about properties, potential acquisitions and competitors. Also, when natural disasters occur anywhere in the country, CNL instantly can determine which of their investments are likely to be affected.

Solaris 2.5

CONTINUED FROM PAGE 51

said. "You're better off if you recompile the [SunOS] application and reprogram for Solaris 2.x," he said. "But there are many users unable or unwilling to do so."

Still, some users won't go to Solaris 2.5 until they install the new Ultra systems sometime next year.

Steve Grandi, manager of central computer services at the National Optical Astronomy Observatories in Tucson, Ariz., said Ultra's appearance forced him to think about upgrading SunOS machines to Solaris 2.5. The observatory has about 150 Sun systems of varying ages.

Solaris 2.5 is bundled with Sun's hardware, but prices for the Intel versions start at $300 for volume shipments and $795 for single-unit shipments. Server versions start at $2,495 for four-CPU, Intel-based systems.

Currently processing orders at 150 MHz.

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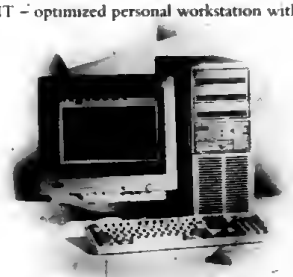

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GroupView out of price reach for some

Videoconferencing product offers users valuable slide-sharing capabilities

By Suruchi Mohan

PictureTel Corp. may be filling a void in its conferencing product line with the GroupView Document Conferencing Projector, but the device's high cost will mean some companies can only look at the product wistfully.

At $10,995, the product simply is "too expensive," said Elliot Gold, president of Telespan Publishing Corp. in Altadena, Calif. "I wouldn't pay for it."

The product lets users share overhead slides among multiple sites. But to use it, users must buy related videoconferencing equipment from PictureTel in Danvers, Mass. These other products — PictureTel's System 4000 family — range in price from $30,000 to $44,000.

The GroupView slide-sharing product is "targeted at the very high end of the market, which is the bread and butter of PictureTel," said Tom Pincince, a senior analyst at Forrester Research, Inc. in Cambridge, Mass. But companies aren't likely to buy videoconferencing gear just to use this, he added.

PictureTel's GroupView *lets users share slides among multiple sites. It will be available in January.*

Analyst said if users can get over the price stumbling block, GroupView is a good product. "There has always been a need for communicating view graphs — more for communicating view graphs than for video," Gold said.

Essential interoperability

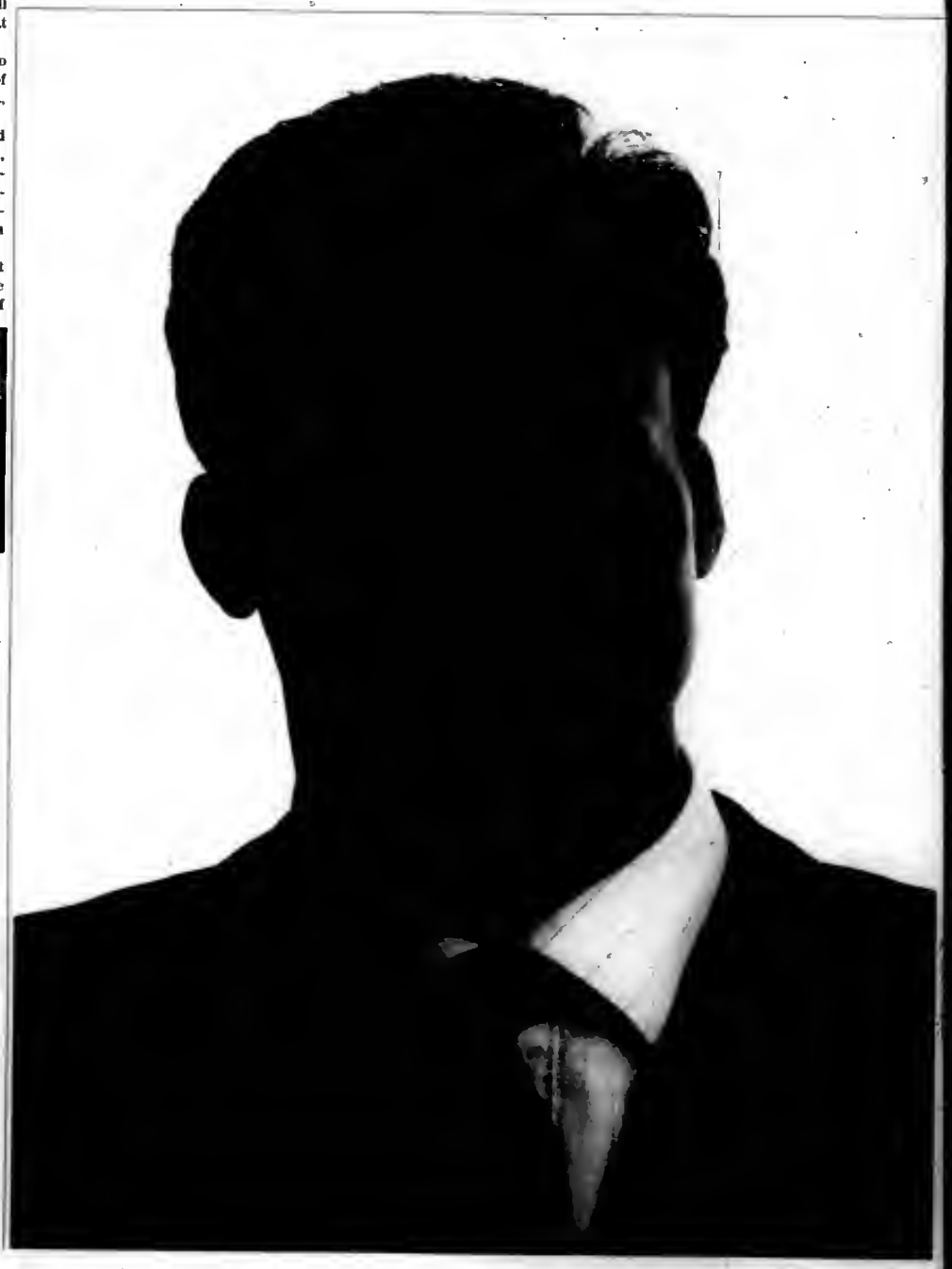
One important feature is that GroupView supports the T.120 specification for multipoint data conferencing. This means that if users don't have GroupView but their software supports T.120, they can dial in to the conference. This makes it interoperable with other systems, according to Sarah Dickinson, program director and a senior analyst at Personal Technology Research in Waltham, Mass.

The product works with either Integrated Services Digital Network (ISDN) or switched 56K bit/sec. lines and will be available in January. The ISDN requirement could pose a problem because, despite the hype, ISDN connections are difficult to get.

However, for users who want to share overheads without incurring the cost of a videoconferencing system, the ShowStation document conferencing projector from Polycom, Inc. in San Jose, Calif., may be more appropriate. In fact, PictureTel has signed an OEM agreement with Polycom. Under the terms of the agreement, PictureTel will customize Polycom's product to work with its videoconferencing systems.

ShowStation is priced at $10,795, but, unlike GroupView, it doesn't require any additional gear to work. Users need two analog phone lines — one for audio and one for graphics.

ShowStation will ship at the end of this month.



The Linksys Group, Inc. has unveiled Turbo MultiShare, a printer-sharing system.

According to the Irvine, Calif., company, Turbo MultiShare is a high-performance, modular printer-sharing system that can handle incoming print jobs at data transfer speeds of up to 270K bit/sec. Turbo MultiShare can link up to 24 PCs, with simultaneous access to a combination of up to eight color, monochrome or dot matrix printers.

Turbo MultiShare features two hardware components: a transmitter that installs onto the parallel port of each PC and a receiver that plugs in to each printer. All peripherals are then chained together with telephone wire. It supports Microsoft Corp.'s Windows and Windows 95 and DOS.

Pricing for Turbo MultiShare starts at $64.

▶ *The Linksys Group*
(714) 261-1288

Infoimaging Technologies, Inc. has introduced 3D Fax 2.0 for file compression and transmission.

According to the Palo Alto, Calif., company, 3D Fax 2.0 lets users compress files into binary images and then fax the binary images to another 3D Fax user. The recipient then scans the printed binary image through 3D Fax and opens the application and document.

3D Fax 2.0 has a high-density feature for transferring documents among fax modems. This feature lets users transmit up to 110K bytes (up to 200 pages of text) of compressed data onto one page.

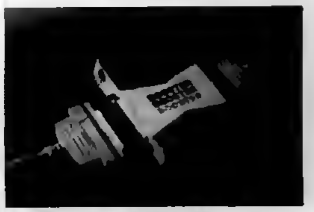
3D Fax 2.0 is a 32-bit, Microsoft Corp. Windows 95-native application. It requires a 386-based or higher PC with Windows 3.1 or Windows 95, 1½M bytes of available hard disk space and at least 4M bytes of memory.

3D Fax 2.0 costs $199.

▶ *Infoimaging Technologies*
(415) 960-0100

Apcon, Inc. has unveiled the ACI-2016 SCSI Booster.

According to the Wilsonville, Ore., company, the booster lets SCSI users extend the distance of any single-ended SCSI bus, doubling the SCSI cable distance. It supports extended data transmissions of up to 40M bit/sec. The booster is transparent to the user and doesn't require a SCSI device address.



Apcon's ACI-2016 SCSI Booster

Without the booster, peripherals and storage devices must be located within 6 meters of the computer for SCSI 1 devices, 3 meters for Fast SCSI and 1½ meters for Ultra SCSI devices. The booster doubles each distance and can be linked in succession to quadruple SCSI bus distances.

Pricing for the ACI-2016 SCSI Booster starts at $295.

▶ *Apcon*
(503) 685-9300

Insitu, Inc. has introduced Conference 1.1, a document conferencing product.

According to the Boston company, Conference 1.1 lets Microsoft Corp. Windows 95 users collaborate and share information in real time. Users can edit and create documents or images from applications remotely over the Internet or through corporate networks. It lets teams trade images and documents visually by simultaneously viewing and annotating them, then transferring the file directly onto another computer.

Conference 1.1 is supported on Microsoft's Windows 95, Windows NT, Windows 3.1 and Windows for Workgroups 3.11. It is available in either 5-, 10-, 25- or 100-user packs. Pricing starts at $895 for a five-user pack.

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Workflow group gets to work

By Tim Ouellette

An industry coalition is trying to unify back-end workflow systems from various vendors under one user-created front end.

If vendors develop products compatible with the specification, users will be able to read all their workflow-related items on one screen, though the items may come from different vendors' systems.

To accomplish this, the Workflow Management Coalition — a group of industry vendors, consultants and user organizations — this week will release its client application programming interface (API). Other interoperability steps will follow (see chart).

Workflow software automates and manages the movement of work items throughout a company.

Most workflow vendors have their own way of presenting work items to users, and very few of these interfaces work with one another or other applications.

With the client API, dubbed Interface 2, developers can build a single application that gathers work from different workflow servers, create a single work list and present it to users. With today's workflow systems, users access each front end separately.

Workflow

"This is a big step to having work items without worrying where that item came from," said Raul Medina-Mora, chairman of the specification committee and senior vice president and chief scientist at workflow vendor Action Technologies, Inc. in Alameda, Calif.

With the API, users also will be able to access these work items from a business application such as electronic mail.

"Right now, each vendor has its own presentation and front end," said Mark Tucker, senior business analyst at National Life Insurance Co. in Montpelier, Vt. "If you need to support two or more packages or don't like the vendor's interface, the client API will let you build your own work list handler."

The interface could help when users replace a workflow system with another compliant vendor's system because the standard work list wouldn't have to be rewritten to communicate with the new workflow server, Tucker said.

Several leading workflow vendors, including Action, IBM and the XSoft Division of Xerox Corp., have announced plans to develop products that comply with the standard, though analysts said more vendors should be involved, including market leader FileNet Corp.

Coalition goes with the flow

The Workflow Management Coalition has taken its first step toward providing several standards to integrate workflow into the IS infrastructure

✔ = Has been completed to date

- ☑ Glossary or standard workflow terms
- ☑ Client application interface that maintains one list of work items from several workflow servers
- ☐ Interface between tools that design the workflow process and workflow engines
- ☐ Interface that lets the workflow server directly launch related business applications
- ☐ Interface that lets different vendors' workflow servers pass work items to one another
- ☐ Interface to administer and monitor several vendors' workflow systems

Firms try to fill 'net security gap

By Suruchi Mohan

Despite all the hype about doing business on-line, electronic mail is by far the most popular application on the Internet. But as many of the well-publicized gaffes have shown, security is still the Achilles' heel of the 'net.

But one man's vulnerability is another man's market opportunity, so vendors are rushing to fill the void in the Internet security arena. "The Internet market is ready to explode," said Kathleen Harvey, senior editor and industry analyst at Datapro Information Security Service in Delran, N.J.

The following companies have announced products in the past few weeks:

- **CommTouch Software, Inc.** in San Mateo, Calif., announced a secure Internet E-mail package called Pronto Secure. It allows connected and disconnected users to send and encrypt Internet mail. It supports many Internet security protocols, such as Power One-Time Pad, Pretty Good Privacy, Privacy Enhanced Mail, Secure Multipurpose Internet Mail Extensions (S/MIME) and MIME Object Security Services.

Pronto Secure, which will ship in March, will require users to replace their existing Internet mail systems, an approach that might prove extremely challenging to companies, Harvey noted. CommTouch plans to ship by mid-1996 a security module that is Messaging Application Programming Interface-compliant and works with a user's existing mail.

- **Integralis Ltd.**, based in Reading, England, with offices in Los Altos, Calif., announced the availability of MIME-sweeper, an antivirus program for the Internet. MIMEsweeper unscrambles incoming messages, initiates a security check and alerts network managers to the presence of any viruses.

Its limitation is that it works only with Simple Mail Transfer Protocol and Lotus Development Corp.'s CC:Mail. The company plans to announce support for Microsoft Corp.'s Mail and Novell, Inc.'s Message Handling Service.

- **Software.Com** in Santa Barbara, Calif., announced Post.office, a server-based security package for E-mail. Post.office software, which supports all the Internet security protocols natively, sits on a company's server. That way, users don't have to change their client software.

It doesn't replace gateways, however. In firms where Internet mail comes into an existing LAN-based E-mail package, it doesn't replace the gateway to the Internet. Rather, it sits between the gateway and the Internet, allowing for more flexibility in addressing and ensuring security of attachments.

MEDICAL ALERT...

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THE INTERNET PAGE, 62

Enterprise Networking

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Browsers compete for spotlight

Web surfers' choices muddied as wave of offerings pounds the market

By Kim S. Nash

A year ago, there was just a handful of World Wide Web browsers, and most were shareware. Today, more than 20 browsers vie for the limelight among users building Internet applications.

They come bundled with online service access. They can be downloaded from the Internet. Some are free; others have a fee. They are even due to be built in to traditional PC software, such as Intuit, Inc.'s Quicken financial package.

They haven't turned up in cereal boxes yet. But give them time.

Netscape Communications Corp. in Mountain View, Calif., is perhaps the best-known browser maker. However, rival Spyglass, Inc. in Naperville, Ill., and other firms license their browsers to several companies that rename and resell them as their own. Microsoft Corp. and Oracle Corp., for example, have such deals for Spyglass' Mosaic.

Regardless of which firm sells the most browsers, prudent information systems managers should study the dynamics of this fast-changing technology before buying.

First, you can't talk about browsers without understanding the Hypertext Markup Language (HTML) war.

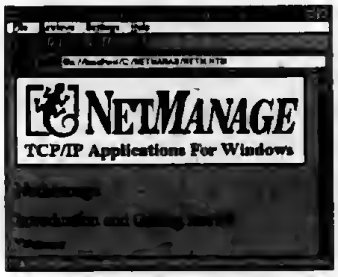
HTML, the programming tool of choice for building Web applications, is regulated by the World Wide Web Consortium, run by MIT in Cambridge, Mass.

Closer Look
WEB BROWSERS

BROWS•ER
\braüs'er\ n

Graphical, desktop interface for viewing and navigating the World Wide Web

Catch the wave



Two of the many browsers *available include NetManage's WebSurfer and Netscape's Navigator*

Version 2.0 is the latest formal HTML specification. The consortium is working with the Internet Engineering Task Force in Reston, Va., to iron out HTML 3.0 guidelines, but nothing final is expected for several months.

Web pages built according to HTML 3.0 proposals can't be read smoothly by many browsers that recognize the Version 2.0 specifications. For better or worse, some browser makers haven't stood still waiting for standards to coalesce. Netscape Navigator 2.0, for example, has added support for tables, background colors and other functions expected to be included in HTML 3.0.

Although some users applauded Netscape's initiative, others said the firm has muddied the waters.

"This is a problem because not all browsers can work with HTML 3.0 or, more importantly, Netscape's interpretations of HTML 3.0 proposals," said Matt Cutler, president of Net.Genesis Corp., an Internet software firm in Cambridge.

Thus, Cutler said, Net.Genesis and many other companies maintain at least two versions of their Web pages — one for Netscape users and one for users of other HTML 2.0-compliant browsers.

Some users have started to draw lines. For example, programmers at "IWorld," an online publication from Westport, Conn.-based Mecklermedia Corp., use only those Netscape extensions that are also supported by at least two other browsers, said Tristan Louis, editor of the magazine.

Second, Web browsers aren't just for looking anymore.

Oracle's PowerBrowser and MCI Communications Corp.'s InternetMCI, for example, are expected to ship next year with a built-in complex search engine from Waterloo, Ontario-based Open Text Corp.

Browsing and more

Navigator 2.0, which is in beta testing, also goes beyond mere browsing. Due to ship by the end of the year, Navigator 2.0 includes electronic mail, improved bookmarking methods and other capabilities. Users will also be able to run animations built with Sun Microsystems, Inc.'s Java language.

Yet as browsers do more, they could get mired in overhead, said Dave Garraffa, who runs BrowserWatch, a Web site that monitors the browser market (http://ski.mskcc.org:80/browserwatch/index.html).

Size might be an issue for corporate users, since part of the appeal of Web browsers is that they are smaller and quicker than traditional PC interfaces.

"We have to hope that Netscape and the rest are smart and efficient about how they add things to their browsers," said Garraffa, who is also IS manager at the Sloan-Kettering Cancer Center in New York.

Finally, the importance of browsers as discrete products may soon fade.

Intuit announced plans last month to include a version of Netscape Navigator in its Quicken for Windows for 96 financial package early next year.

The move sets a precedent for PC software makers, said Mussa Khiar, a webmaster at Raychem Corp. in Menlo Park, Calif. "More and more companies will bundle Internet access as an option," Khiar predicted.

Beyond Netscape

Web surfers have seen it: Sites whose home pages notify that they are "optimized for Netscape," or words to that effect. That means these pages use Netscape's HTML extensions, such as background colors or tables.

Some programmers even set up their sites *not* to serve certain features and/or pages when they detect the knock of a non-Netscape browser. They mistakenly think that only Netscape's Navigator can understand certain HTML features.

For users of other companies' products, Microsoft and Spyglass have begun to tackle that problem. The latest edition of Internet Explorer masks itself as a "Mozilla" browser. Mozilla is the same so-called "user-agent field" moniker that Netscape Navigator goes by when it identifies itself to a Web server.

Meanwhile, Spyglass recently started a guerrilla operation to coax companies, one by one, to ditch labels that tell users their sites are optimized for Netscape.

Product managers and engineers at Spyglass have begun to send E-mail to the webmasters for those pages. The message explains that Spyglass' Enhanced Mosaic browser as well as several others on the market supports many of the same features that Netscape's latest version of Navigator does.

— Kim S. Nash

Just browsing

The following is a partial list of browsers – most are free, at least for a 30-, 60- or 90-day trial period

COMPANY	BROWSER	URL TO GET BROWSER
InterCon	NetShark	http://netshark.internet
Ipswitch	Ipswitch Enhanced Mosaic	http://www.ipswitch.com
National Center for Supercomputing Applications	NCSA Mosaic	ftp://ftp.ncsa.uiuc.edu
Quarterdeck	QMosaic	http://www.quarterdeck.com/
Sun	Hot Java	http://sun.com

THE PAGE

When 'net callers knock, will your server answer?

Caravelle's WebWatcher continually monitors systems, logs status

By Patrick Dryden
LAS VEGAS

All the careful construction of a home page or other Internet service collapses if the foundation fails. When hung servers, jammed routers and clogged gateways ruin access attempts, fickle callers may not try again.

World Wide Web authors or service providers that don't have sophisticated TCP/IP network management platforms now have an easy way to check a wide variety of sites around the clock, using a new tool from Caravelle Networks Corp.

Caravelle introduced WebWatcher, a Windows-based tool kit, at Comdex/Fall '95. Administrators can continually monitor systems and other devices on TCP/IP networks, log their status and receive alerts via electronic mail or pagers.

"I need the ability to track Web service uptime for my clients, to prove 95% reliability or give them the month free," said consultant Terry Taylor. He is principal of Yes Online, a Web site design and maintenance service in Torrance, Calif. "With this tool, I can guarantee service availability," Taylor said.

From the Comdex show floor, Taylor tested WebWatcher on a retrieval system he recently inaugurated for TRW Business Credit Services, Inc. in Orange, Calif. That service provides individual TRW business credit reports via the Internet for $38.

Some showgoers watching the demonstration came up with another use for WebWatcher: Firms vying for Internet business could track the performance of competitors.

WebWatcher uses a local TCP/IP address or a remote uniform resource locator to discover all devices connected to the network.

Like other network management tools, WebWatcher can identify IP devices such as routers and gateways, agents reporting via the Simple Network Management Protocol and a variety of servers — Web, file transfer protocol, news, mail, gopher, Telnet and domain name servers.

Some attendees who supplied the location of their Web site for the demonstration were shocked when WebWatcher also identified the servers and workstations back home. The demonstration taught them the value of firewalls.

Some Internet aficionados said they prefer free utility programs that perform many of the same functions as WebWatcher. They said Caravelle also misleads buyers, because WebWatcher really just checks system response instead of Web page functionality.

But Taylor defended the product. "I haven't found a tool like this, with real-time monitoring that can page me about problems," he said.

Pricing for WebWatcher ranges from $295 for monitoring 10 devices to $6,070 for monitoring 500 devices. Site licenses also are available. WebWatcher requires a 386-based or better PC with 8M bytes of RAM running Windows. A version with an Hypertext Markup Language interface will be released early next year, said Don Paré, president of Caravelle in Ottawa.

Caravelle Networks
Ottawa
http://www.caravelle.com

- **Product:** WebWatcher
- **Description:** A Windows-based systems management tool that monitors Web and other servers and vital TCP/IP devices. It tracks their status and sends alerts via the console, E-mail or pager when a target doesn't respond.
- **Monitored devices:** Web, FTP, news, mail, gopher, Telnet and domain name servers; routers; gateways; and SNMP-managed devices
- **Requirements:** Windows PC with at least a 386-based processor and 8M bytes of RAM
- **Price:** From $295 for 10 monitored devices

http:

You can't be a webmaster without knowing the basics of Hypertext Markup Language (HTML), which is used to create World Wide Web pages. The Web babbles with how-to guides, style tips and other resources related to the language. Here are some of the best:

- The World Wide Web Consortium, which is a group of academics, vendors and other interested parties, is responsible for HTML specifications. Read the rules and regulations for HTML 2.0 and proposals for the forthcoming HTML 3.0 at http://www.w3.org/pub/WWW/.
- A basic HTML style guide can be found at http://guinan.gsfc.nasa.gov:8e/Style.html. Some of the more useful pages at this site are those devoted to conceptual, rather than technical, advice about using HTML.
- Composing Good HTML at http://www.cs.cmu.edu/~tilt/cgh offers suggestions about how to design pages that look authoritative and timely.
- See http://www.iglou.com/scm/etc.bored/web-makers.html for a no-frills, concise collection of HTML lore, technical guidelines and recommendations. Particularly useful are the how-to links and product listings.
- Mastering Cyberspace at http://www.cstudies.ubc.ca/genesis/courses/mastering.html is an on-line tutorial about the Web that includes homework and quizzes on HTML.
- If you're looking for levity with your programming tips, check out http://www.halcyon.com/cmhsm/. Clyde M., the master of the site, is a self-described "artist and rebel without a clue." But he knows a thing or two about HTML and the Web.

– Kim S. Nash

Word processing maker gives Internet a foreign Accent

Suite lets users publish, read Web pages in 32 languages

By Torsten Busse
LAS VEGAS

Accent Software International Ltd., a maker of multilingual word processors, is trying to internationalize the Internet.

The Jerusalem-based company recently announced a suite of applications that will let users author, publish and read World Wide Web pages in 32 languages, under any language version of Microsoft Corp.'s Windows 3.1 and Windows 95, company officials said.

"The most Internet growth is in areas where people are not speaking English," said Robert Rosenschein, founder and president of Accent.

"While the Internet is hailed as a global communications medium, the ability to send and receive information in any language, or even in multiple alphabets, is still missing."

All in one

The Internet With An Accent suite costs $129. It includes six multilingual applications, including a viewer, stand-alone browser and browser add-on, a HyperText Multilingual Markup Language authoring tool; an electronic-mail add-on; and an E-mail reader.

Besides these languages, Accent also supports most Eastern and Southern European languages.

Multifaceted

The HyperText Multilingual Markup Language authoring tool lets users create Web pages in Latin, non-Latin and bidirectional alphabets in the same document.

The E-mail add-on lets users create, send and receive electronic mail in multiple languages.

The viewers work with other Internet browsers, including Netscape Communications Corp.'s Navigator, and enable the browsers to view multilingual content.

Internet With An Accent is largely European-oriented, but Accent will add support for some Asian languages, Rosenschein said.

The applications comply with the Messaging Application Programming Interface and Multimedia Internet Mail Extensions. They are expected to ship by the end of the year.

Busse is the Munich correspondent for the IDG News Service.

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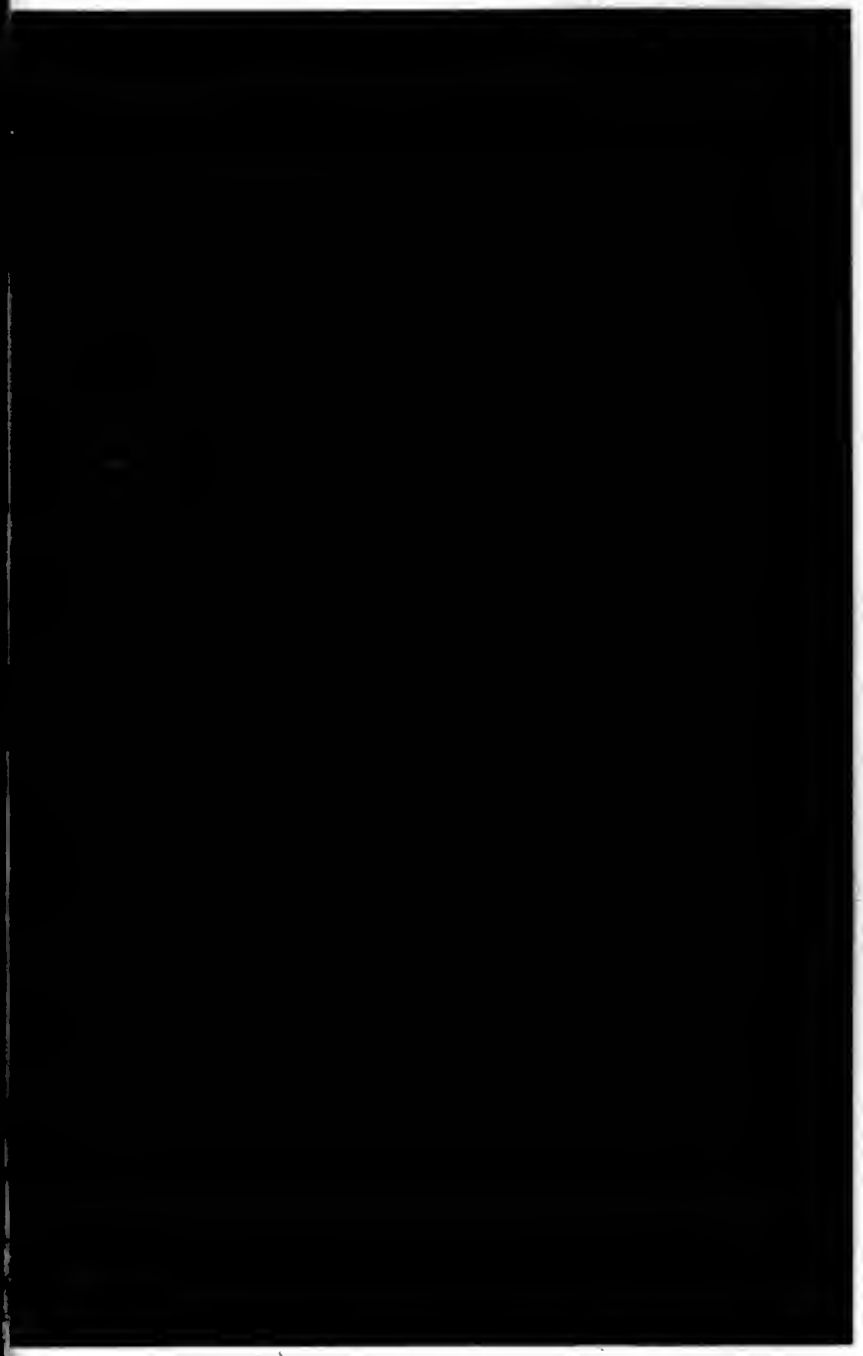

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Digital maintains role as integrator

By Snruchi Mohan

Digital Equipment Corp., attempting to cash in on the need for electronic messaging interconnectivity, recently announced a series of software products. In the process, it also reinforced its newly acquired role of systems integrator.

The products were designed to improve connectivity between X.400, the Internet and IBM's SNA Distribution Services (SNADS) messaging environments and the manageability of X.500 environments. The products include the following:

- **Simple Mail Transfer Protocol (SMTP) Gateway, Version 2.0, for Mailbus 400.** This gateway will run on Digital Unix and support Multipurpose Internet Mail Extensions (MIME) in addition to SMTP. MIME allows attachments and binary files to be sent over the Internet. This gateway will allow the flow of messaging traffic between Mailbus 400 — an X.400 backbone switch — and the Internet.
- **SNADS Gateway, Version 1.0, for Mailbus 400.** This is a third-party offering from X.gate, a vendor in the U.K. It provides connectivity between X.400 and SNADS mail systems, such as OfficeVision/MVS and OfficeVision/400.
- **Digital X.500 Information Manager, Version 1.0, for Windows.** This allows systems administrators to manage Mailbus 400 routing information across geographically dispersed directories.

Standardized gateways

Digital's offerings will allow for greater standardization of its gateways, according to Simon Labrie, director general of the information management branch at the Ministry of Natural Resources in Ottawa.

"We had gateways before, but they were not standardized," he said. This meant Labrie had to manage an even more complex mail system.

MIME support is important to Jocelyn Guay, technical project manager at the ministry. Guay implemented Mailbus 400 a few weeks ago and was considering using an SMTP gateway from a competitor.

"Now that they have MIME support, we will reevaluate," he said.

However, although his organization is using the X.500 directories product from Digital, Guay doesn't plan to use Information Manager 1.0 and doesn't "see much value in it for us."

Snapshot: Under lock and key

Recent information security product announcements

Vendor	Internet address	Product	Price/Availability
Atemi Champaign, Ill.	http://www.atemi.com	**NetShade Version 2.0** Network encryption software for Windows 3.1 and Macintosh, E-mail, file transfers and Web access	$35 to $150 per user/January
Axent Technologies Rockville, Md	http://www.axent.com	**OmniGuard/Enterprise Access Control for Windows 95** Security management across multiple platforms	Not announced/ Q1 1996
CKS NA Pittsburgh	idt@cks-na.mhs.compuserve.com	**CKS MyNet** Single sign-on software enabling access to multiple systems with one password and user ID	$35 to $200 per user, depending on volume/ February
CommTouch Software San Mateo, Calif.	micheleb@ipri.com	**Pronto Secure** Encryption software for secure Internet E-mail; supports a variety of encryption standards	$299 single copy/ Q1 1996
McAfee Associates Santa Clara, Calif.	http://www.mcafee.com	**WebScan** Detects viruses, including the new macro viruses, in files and E-mail from the Internet	$65; optional two-year updates and support, $60/Now
Memco Software New York	memco@memco.com	**Integrated Memco Security for Open Systems** For host access control with CyberSafe's Challenger network security product	Starts at $15,000/ Now
S&S Software International Burlington, Mass.	http://www.drsolomon.com	**Dr. Solomon's Anti-Virus ToolKit** Detects and removes viruses on Windows 95, Windows NT, Unix and Macintosh	$99 (Macintosh); $125 (others)/Now

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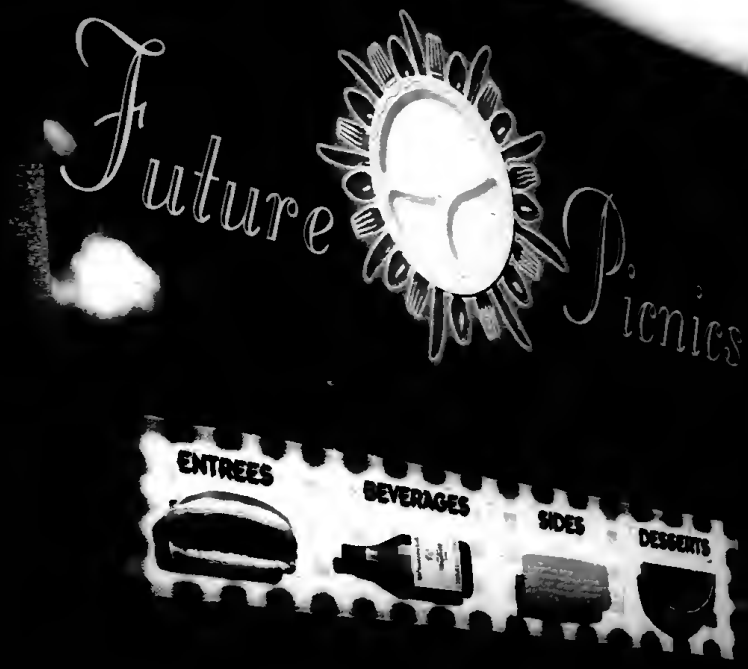

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Academia turns to ATM

High bandwidth needed to transfer 3-D anatomical images

By Laura DiDio

The human body provides one of the best reasons to use 155M bit/sec. Asynchronous Transfer Mode (ATM) technology.

Downloading The Visible Human, a digitized, three-dimensional image of the male and female human anatomy, from the World Wide Web is the rage in the academic community. But the 1,871 cross sections of anatomy take up billions of bytes — the complete male data set alone reqoires 15G bytes of storage.

The Visible Human project initially ran on a LAN at the University of Colorado. Moving beyond the LAN to the Web presented a real challenge to the project administrators when they started in 1994.

"That's when ATM became a must," recalled Jim Nemchak, the oniversity's director of network services. "Digitized images are bandwidth hogs. There was no way onr standard 10M bit/sec. Ethernet networks could handle such large file transfers without bogging down or crashing."

The University of Colorado's Jim Nemchak *says, "ATM became a must" to handle the transfer of digitized images*

How to do it

The project is also a 3-D illustration of how ATM technology will be used to facilitate everyday nse of data-intensive and multimedia applications across networks.

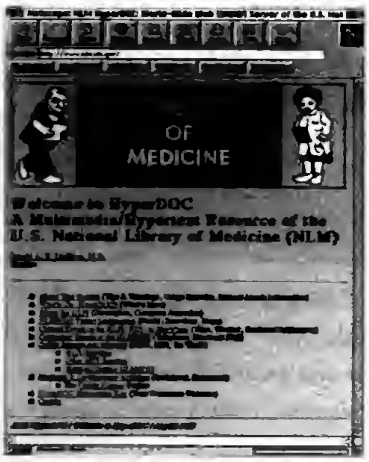
The Visible Human can be accessed via the U.S. National Institutes of Health's National Library of Medicine home page on the Web. It is the result of a four-year, $1 million joint project whose sponsors included the University of Colorado's Health Sciences Center in Denver.

It served as a test project for the longer-term goal of combining the Library of Medicine's bibliographic and factual medical database services with libraries of digital images distributed over high-speed 155M bit/sec. ATM networks.

The university's Health Sciences Center consists of 4,000 nodes attached to a mixture of Novell, Inc. NetWare 3.12 and NetWare 4.1 LANs.

The gateway to the Web is a Cisco Systems, Inc. Lightstream 2020 ATM eoterprise switch. Nemchak said the Health Sciences Ceoter chose the Lightstream switch because it offered the fastest, most scalable and most flexible solutioo for delivering high-resolutioo data images of the human body at full wire speed.

"The Cisco Lightstream 2020 gives us forwarding rates of 1½ millioo packets per second and the flexibility to connect to a variety of oetworks, including Etheroet, 100M bit/sec. FDDI and T1," Nemchak said.



Digital images *of The Visible Human can be accessed from the World Wide Web by going to http://www.nlm.nih*

Outer limits

While the spotlight so tar has beeo oo The Visible Human, the Health Scieoce Center is actively pursuing a oumber of other bandwidth-hungry projects that will push the limits of its networks.

Among them are esoteric research initiatives such as gene sequencing and LAN-based desktop video tor 4,000 end users, Nemchak said.

"We're in beta test right now for the desktop video applicatioos, and we quickly realized that after you get above three or tour concurrent video sessions, you need the big ATM pipe or else you can kiss your network connectioo goodbye," Nemchak said.

Acquisitions help firms expand network service

New tools aid client/server monitoring

By Patrick Dryden

Two leading systems management vendors are expanding the scope of their tools to help administrators monitor their eoterprisewide clieot/server oetworks.

- **BMC Software, Inc.** in Houstoo will extend its Patrol management tools to monitor IBM MVS mainframes and Novell, inc. NetWare-based servers.
- **Compuware Corp.** in Farmington Hills, Mich., will give its EcoTools software the ability to check performance of applicatioos across the oetwork.

Following an industry trend, both companies are using acquisitioos to streogthen their products.

Systems management

Buying in

BMC will infuse Patrol with technology gained through two receot purchases: NetWare monitoring tools from HawkNet, loc. in Carlsbad, Calif., and Simple Network Management Protocol agents from Peer Networks, Inc. in San Jose, Calif.

BMC is developing its own MVS monitoring features.

Compuware bought CoroNet Systems, Inc. to extend its server-oriented EcoTools. CoroNet's Management System, which automatically discovers, measores and tracks the conversations betweeo clients and servers, will be integrated into EcoTools as EcoNet.

Demanding management

Escalating management demands will drive the shipment of overall management platforms to 75,944 units by the end of 1995, a 42.3% increase over 1994, according to International Data Corp.

On systems patrol

Next mooth, BMC will begin beta-testing Patrol modules and MVS ageot software that will let managers remotely monitor Sysplex workloads and respoose times, system resources and jobs, and subsystems such as CICS and IMS. Initial MVS database support will include DB2 from IBM, Oracle7 from Oracle Corp. and Adabas from Software AG.

"Adding the MVS piece will let us be more proactive, no matter what the environment," said one Patrol user, a database administrator at a telecommunications services company who asked to remain anonymoos. "Today, when something goes wrong on the mainfame Oracle database, operations notices and calls support — or worse, customers call us. Now maybe we will be able to clean something up before they do."

With broader PC and LAN support and internally developed MVS tools, BMC steps closer to delivering the cohereot management view that users need, said Chet Geschickter, research director at Hurwitz Consulting Group in Watertown, Mass.

Doctor's view

Compuware's acquisitioo "will get the hot CoroNet technology in the door of more high-level users, who oeed help tracking the performance of applications across their networks," said Brian Burba, a network management analyst at Ioternational Data Corp. in Framingham, Mass.

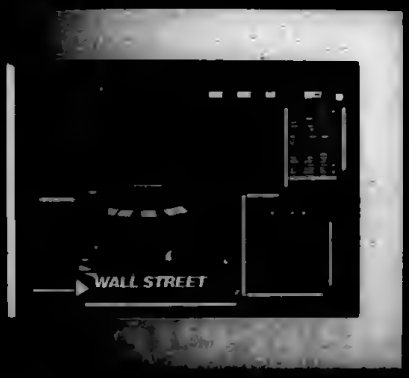
EcoNet lets administrators see into the network traffio stream to check the amount of traffic generated by using applicatioos and services such as transferring files or accessing the World Wide Web.

EcoTools, meanwhile, monitors and manages applicatioo activity within a server.

Planned integratioo of the two tools pleases one CoroNet user, the data resources manager at a pharmaceutical developer and manufacturer.

"We have thermometers and blood-pressure tools to tell us networks and applications are alive but no doctor to evaluate the system's overall health," he said.

Compuware, however, doesn't yet support all the database systems on his network. "We can't proactively manage application performance until we can see into both the network and *all* of our systems," he said.



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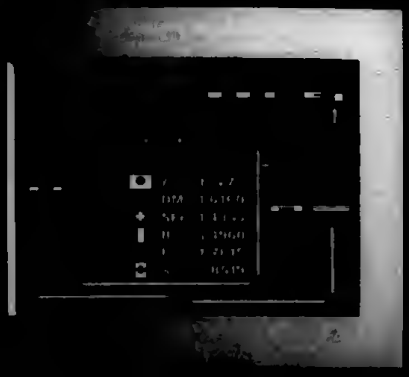

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NetWare to support ISDN

Server to speed remote user access

By Bob Wallace

Network Express, Inc. in Ann Arbor, Mich., next month will ship a package that lets users turn a NetWare server into a remote access server that supports Integrated Services Digital Network (ISDN) lines.

According to a Novell, Inc. spokeswoman, the product is the first of its kind.

The product combines an ISDN processor and a Novell NetWare Loadable Module. The NLM (NLM) supports NetWare Connect 2 or NetWare Multiprotocol Router communications servers.

By supporting bandwidth management, security, compression, IP routing and multilink Point-to-Point Protocol (PPP) features, NE Fusion can obviate the need for stand-alone and often expensive remote access servers. Additional features are due out in the next several months (see chart).

Kirk Brauch, a systems engineer at R. R. Donnelley & Sons Co. in Chicago, praised NE Fusion. He said its all-in-one server approach "is much easier to use and is simpler to manage than [today's] process of making remote users dial in to an intermediate server and go out over the LAN to a box that does authentication."

The package's strong suit is its broad-based, wide-area network protocol support. NE Fusion supports ISDN Basic Rate Interface (BRI) links, frame-relay, switched 56K bit/sec. links, private lines, and dial-up links at speeds up to 28.8K bit/sec via add-on software modules

Most remote access servers support only 28.8K bit/sec dial-up link and private lines.

"Users want as many options as is possible," said Daniel Briere, president of TeleChoice, Inc., a consultancy in Verona, N.J. Briere said ISDN and frame relay are particularly important because of their high bandwidth, compared with dial-up connections.

Network Express' ISDN coprocessor has four BRI ports, each comprising two 64K bit/sec. main channels. NE Fusion's multilink PPP feature can be invoked to combine two 64K bit/sec. channels to support a 128K bit/sec. connection

Multilink PPP lets remote sites support high-bandwidth applications such as telecommuting, videoconferencing and imaging

Users also can equip their NetWare server to support routing beyond IP. Early next year, the vendor will ship a software module that performs Novell IPX routing and spoofing and another that supports Apple Computer, Inc.'s AppleTalk routing and spoofing.

The remote express

The NE Fusion product line from Network Express allows for ISDN remote access through Novell NetWare servers

Module	Price	Availability
NE Fusion BRI*	$3,000	Year's end
X.25 over BRI module	$1,000	Year's end
Frame-relay module	$1,000	Year's end
IPX routing/spoofing	$1,000	Q1 1996
AppleTalk routing/spoofing	$1,000	Q1 1996
Digital modem card (8 ports)	$6,000	Q1 1996
NE Fusion-PRI**	Unavailable	Q1 1996

* Basic Rate Interface. It supports two 64K bit/sec. channels and one 16K bit/sec. channel.
** A Primary Data Interface connection. A PRI supports 24 64K bit/sec. channels

IntelliCom aims to give complete ISDN package

By Bob Wallace

When it comes to Integrated Services Digital Network (ISDN) networking, you better have connections.

So says start-up IntelliCom Solutions, Inc., which in less than a year has forged alliances with most major ISDN equipment vendors, the seven local Bell companies and the Top 3 long-distance carriers (see chart).

Integrated Services Digital Network

The Exton, Pa., firm wants to limit user frustration with inconsistent ISDN coverage by carriers. Its goal is to offer users a single point of contact and therefore one-stop shopping for turnkey wide-area ISDN networks.

IntelliCom will design ISDN networks and order, provide and install ISDN lines from local and long-distance carriers. They also will test all components of the package for users.

Agreements in place

Analysts who track ISDN said intelliCom has done an impressive job. Other companies, such as Symplex, Inc. and Primary Rate, Inc., deal only with equipment and resell lines.

"There are quite a few companies out there that offer equipment and resell ISDN lines, but I haven't seen one that offers a complete solution and has the necessary agreements in place to pull it off," said Mike Finneran, president of dBrn Associates, Inc., an ISDN consulting and education firm in Hewlett Neck, N.Y.

First Securities Savings Bank, Inc. in Bloomfield Hills, Mich., is glad it didn't go it alone.

"We needed to get ISDN in all 50 states to work with Intel [Corp.]'s ProShare conferencing system, but ISDN was new to us — and to many of the states where we needed the service," recalled Jennifer Boyer, a computer analyst at First Securities. "We first went to our dealer but then decided to deal directly with IntelliCom. They acted as an intermediary and handled all the line ordering and such very well."

Mary McCarthy, network manager at Prestone Products Corp. in Danbury, Conn., looked to intelliCom for assistance in acquiring ISDN for six sites in three far-flung states.

"They handled the ordering and installation well," McCarthy said. "They've been on time, and our [dealings] with them have been favorable to date. They've had salespeople working with us before and after the installations."

IntelliCom also provides ongoing network management and help desk services. The complete package is offered on a nationwide basis.

Using ISDN nationwide is difficult at best, partly because availability and the process for getting the service vary even within telephone company regions.

Still, no ISDN vendor can overcome some basic facts about the market, according to analysts.

Instant ISDN

IntelliCom Solutions will provide turnkey ISDN networks. It will get ISDN equipment from:

- 3Com
- AT&T
- Combinet
- DigiBoard
- Gandalf Technologies
- IBM
- Intel
- ISDN Systems
- Motorola
- MultiTech
- Network Express
- PictureTel
- U.S. Robotics

It will offer ISDN lines through deals with:

Local carriers:

- Ameritech
- Bell Atlantic
- BellSouth
- Nynex
- Pacific Bell
- Southwestern Bell
- US West

Long-distance carriers:

- AT&T
- MCI Communications
- Sprint

"No matter what you say about ISDN networking, the reality is that the service just isn't offered everywhere people want to use it," said Maribel Howard, an analyst at International Data Corp. in Framingham, Mass. "Users will need other options for some sites."

To address that reality, IntelliCom provides frame-relay service, which is nearly ubiquitous in the U.S., as a means of tying remote sites to enterprise networks where ISDN isn't available.

Briefs

WAN card released

Computer Modules, Inc. in Santa Clara, Calif., is shipping the WAN Master/PCI, a serial communications card that lets PCs communicate at rates up to 15M bit/sec. over a high-speed, carrier-provided data line. The card is among the first to let a PC with a Peripheral Component Interconnect bus transmit data at native LAN speeds such as 10M bit/sec. Ethernet. The vendor also announced a Microsoft Corp. Windows NT-based Software Development Kit for users who want to incorporate the card into video servers and/or multiprotocol routers. The card costs $995.

BayStack watch ends

Internetworking giant Bay Networks, Inc. is shipping the BayStack 10Base-T Ethernet Stackable Hub. It costs $890 for a 12-port unit and $1,549 for a 24-port model. Bay is also shipping EZ LAN for hub management and EZ Internetwork for router management. Both packages cost $99 until Jan. 31. After that, EZ Internetwork and EZ LAN will cost $695 and $494, respectively.

Control Data gives Banyan support

Control Data Systems, Inc. recently started to offer technical support for Banyan Systems, Inc.'s Enterprise Network Services (ENS) for SunSoft, Inc.'s Solaris operating system. Control Data in Arden Hills, Minn., will offer support over telephone, electronic mail and fax. Services include installation and configuration assistance, technical bulletins, software packages and software upgrades. ENS was designed to let users access databases, applications and other resources across systems from different vendors.

Big Token Ring switch ships

Token Ring switching start-up Xylan Corp. in Calabasas, Calif., has started shipping one of the industry's largest Token Ring switches. The Omni-9 switch can support up to 48 switched Token Ring ports, at $1,700 a port.

Fore! ATM switch coming

Fore Systems, Inc. recently delivered ForeRunner ASX-1000, a scalable, nonblocking Asynchronous Transfer Mode switch with a 10M bit/sec. backplane for use in LAN backbone networks. The switch is shipping three months ahead of schedule. Pricing starts at $42,950.

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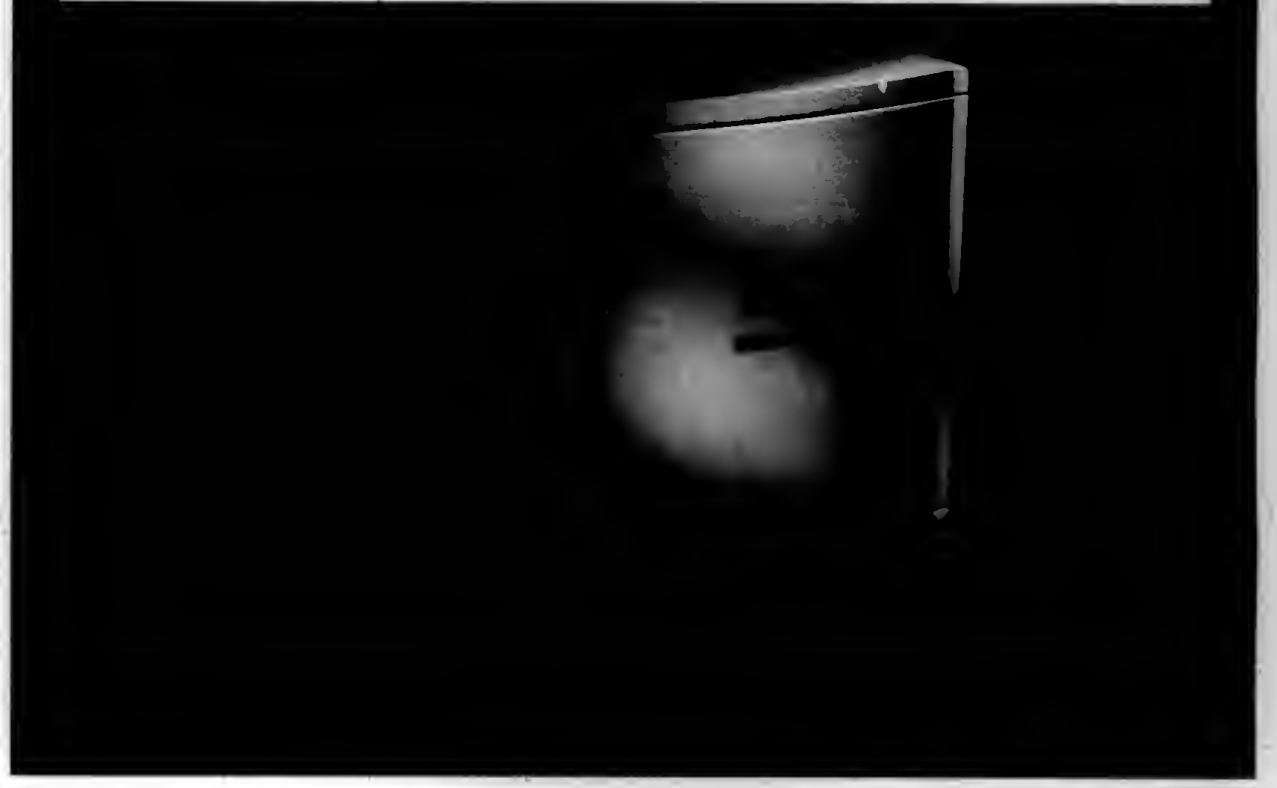

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SYSTEMS INTEGRATION BECOMES EVEN BIGGER BUSINESS, 76
BEST WESTERN ROLLS OUT NEW RESERVATIONS SYSTEM, 74

Large Systems

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IBM makes usage pricing more useful

By Craig Stedman

The measured usage pricing that IBM offers on some of its mainframe software hasn't done much for customers since it became available in early 1994. But the recent addition of the DB2 database to the list of eligible products should broaden the usefulness of the usage-based approach.

But don't expect miracles or major cost savings overnight. IBM has been up front from the start, saying this first cut at pricing based on CPU utilization wasn't meant to reduce software bills across the board. It is more a testing of the waters that benefits only those customers who use their software relatively lightly.

As a result, not many companies have adopted measured usage pricing. Only about 200 usage-based software licenses were sold in the U.S. during the past 18 months, said Jeff Teplensky, an IBM software marketing official who spoke at this month's Guide International Corp. user group meeting in New Orleans.

As with the other eligible products, DB2 will have to be used sparingly to get a price break, Teplensky said. Mainframe shops, however, often don't push the relational database to the levels of CPU use typical of IBM's CICS and IMS transaction monitors, he said. That hopefully will allow a higher percentage of customers to start taking advantage of the usage-based pricing.

Users and analysts agreed that DB2 should be able to cut a somewhat wider swath than the two transaction monitors have.

"So far, [measured usage] hasn't been something that could do us any good," said Tom Birk, operations manager at the Environmental Protection Agency's data center in Raleigh, N.C. The EPA runs most of its financial data through CICS, which makes its usage too high to qualify for any savings, he said.

But DB2 "is not a major piece of our world, so that may work for us," Birk added. Only a small portion of the agency's files are stored in DB2, and usage should fit comfortably within the CPU

Usage pricing, *page 76*

How it works

IBM's measured usage pricing for mainframe software

ELIGIBLE PRODUCTS:

- CICS transaction monitor (Version 2 and above)
- IMS transaction monitor/database (Versions 3 and above)
- DB2 database (Version 2, Release 3 and above)
- TSO/E system programming tools (Version 2)
- BatchPipes/MVS batch accelerator
- Message Queue Manager middleware (Version 1.2)

HOW RATES ARE SET:

1. A user measures CPU usage each hour for a month
2. The peak hour of usage is listed for each day
3. The fourth-highest day determines the monthly charge
4. New measurements are taken every six months

Certification tests get high marks from employers

By Dan Richman

Certification exams already are well established at Novell, Inc., Microsoft Corp. and other large vendors, but they are just starting to emerge from suppliers of relational database management systems.

Employers at user sites say the exams can help them hire and promote the best candidates. Employees say passing the exams can help them compete.

"We're seeing more user sites [that are] more interested in this now than before, maybe because client/server computing is handling more mission-critical applications than before. So it's even more important to have well-trained personnel," said Jim Malone, director of services marketing and planning at Informix Software, Inc. in Menlo Park, Calif.

The three largest vendors in the relational database management systems industry offer certification exams.

Such testing appeals to users and employers.

"Even with 16 years of experience there are no guarantees my company won't start outsourcing tomorrow; so I have to maintain my marketability. This is the best way I know to do it," said Karen Schuh, a database administrator at a Fortune 100 company in the Northeast.

"I have no college degree, and to get promoted here, I want the Sybase certification as an advantage, something that distinguishes me," said Bill Sampson, a software engineer at National Semiconductor Corp. in South Portland, Maine.

Market leader Oracle Corp. in Redwood Shores, Calif., last week started to administer its $195 database administrator's exam. Informix began offering its separate database administrator and system administrator exams in the past six months. It costs $850 to take each exam.

The Oracle exam has 75 questions and takes about two hours to complete. It tests seven skill areas, including data management, backup and recovery, and performance and tuning.

Sybase, Inc. in Emeryville, Calif., has been testing database administrators for a year and so far has certified about 750. It also has certified about 2,000 users of Powersoft Corp.'s PowerBuilder. That makes it the only vendor to certify front- and back-end proficiency. Each Sybase exam costs $450.

The three vendors got help

Certification, *page 76*

Test pattern

Higher morale and commitment. Greater knowledge. More productivity. Better user support.

Those are the benefits of being tested and certified in an information systems specialty, according to a study of 250 IS managers released last month by International Data Corp. in Framingham, Mass. The study found that 92% of IS managers observed those qualities more often in certified workers than in noncertified ones.

At companies that hire only certified employees, average unscheduled downtimes last 3½ hours each, compared with 5.3 hours at companies that also hire noncertified workers. — *Dan Richman*

Briefs

Banks outsource credit-card operations

First Union Corp. in Charlotte, N.C., which plans to acquire **First Fidelity Bancorp** in Newark, N.J., announced that the two banks will outsource processing of their combined merchant credit-card operations to **Nova Information Systems, Inc.**

Wang lands NASA contract

Wang Laboratories, Inc. in Billerica, Mass., has won a five-year, $32 million contract from NASA for continued hardware maintenance, system software licensing and on-site software analyst support at NASA's Kennedy Space Center in Florida.

Derivatives 101

Computer scientists at **Columbia University** in New York claim to have developed a technique that lets financial traders set prices for complex derivatives instruments more quickly and accurately than the widely used Monte Carlo simulation method. Columbia said its software, Finder, can solve highly complex problems that involve as many as 360 variables, using deterministic, low-discrepancy sampling. IBM used a similar technique to create a software system it introduced in September called the IBM Deterministic Simulation Blaster. Licenses for Columbia's Finder software are available through Columbia Innovation Enterprise, the university's technology transfer and licensing organization.

SHL wins 911 pact

SHL Systemhouse, Inc. in Ottawa has won a 10-year, $47 million contract to implement and maintain an emergency communications center and enhanced 911 system for Northampton County, Pa.

Best Western registers new service systems

By Thomas Hoffman

When Best Western International, Inc. went looking for a new central reservation and property inventory system in 1993, the Phoenix-based hotelier wanted to do more than streamline its reservations processing.

The project was an opportunity for the hotel chain to re-engineer its outdated hotel processes and guest services. The result is a $15 million, two-tier client/server reservations system that is expected to generate $50 million in incremental annual room revenue. The system will help the hotel chain slash its corporate and property-level operating costs.

Best Western's Bill Watson *says the hotel chain will improve service and cut costs with its new system*

"It's not a matter of repaving the cow path but building a new road," said Bill Watson, executive vice president at the sprawling hotel chain. Best Western has 3,500 properties in 60 countries. The client/server reservation system will go live in March.

Big payoff

Best Western's sales agents will be able to use Digital Equipment Corp.'s Venturis Pentium-based intelligent workstations to launch queries against an Oracle Corp. Oracle7 relational database and get immediate answers to customer questions. That type of functionality has led Watson to project a $50 million annual increase in reservation revenue — a hospitable return on a $15 million technology investment.

Best Western's new reservations system is based on Gold One, a software package from Fidelio Technologies, Inc. in Naples, Fla. Best Western began installing the system last January. It runs on Digital's 64-bit AlphaServer 8400 machine. The reservations system will give sales agents detailed guest histories, interactive mapping software and group booking capabilities.

For 16 years, Best Western used an IBM mainframe-based reservation system developed by Western International Hotels — as did competitors such as Holiday Inns Worldwide. The Westron system was fast and efficient in its heyday, Watson said, but the Best Western version that ran on an IBM 4800 system couldn't match the intelligent workstation interfaces in today's client/server schemes.

For example, Best Western's guests once had to call around to any of 18 different departments to get marketing, frequent traveler services and other support. To answer customer questions, Best Western sales agents had to launch queries against one of the hotel's six legacy databases.

You've come a long way, baby

Guest history systems have made big strides in the hotel industry in the past 25 years. For example, The Plaza Hotel in New York was considered a pioneer when it employed clerks in the early 1970s to manually enter guest history information onto index cards.

Up-to-date linkup

To support a volume of 50,000 to 60,000 calls worldwide each day, Best Western has installed a Fiber Distributed Data Interface ring in its Phoenix data center.

The hotel also will replace the T1 network links between its reservations centers and hotels with AT&T Corp. frame-relay technology in the U.S. and a Virtual Telecomm Network, a European equivalent of frame relay, to link to its hotels across the Atlantic.

By upgrading its telecommunications infrastructure, Best Western expects to reduce its annual telecommunications costs by 35% to 40%, said Steven Jacobs, president of Vagus Technologies, Inc. in Atlanta. Vagus is a systems integrator that helped develop the new reservation system.

For example, after it installs a Hughes Network Systems, Inc. VSAT satellite network between its properties, Best Western expects to drop the monthly data communications and telecommunications costs for each room to between 65 cents and $1.30. That compares favorably with the current industry range of $5.70 to $6.50 per room, Jacobs said.

The VSAT links also will help pave the way for DirectPC, a service the hotel is beta-testing that will let guests connect to the Internet from their rooms.

"What Best Western is doing is the wave of the future," said Richard Moore, an associate professor of hotel information technology at Cornell University's School of Hotel Administration in Ithaca, N.Y.

Aetna IS seeks to ensure speedy reimbursements

New chief technology officer urges move to automation, client/server

By Mitch Wagner

Aetna Life and Casualty Co.'s new head of information systems wants to help motorists involved in minor accidents get their fenders fixed faster.

And it isn't just automotive insurance claims that need a boost. Even the most minor claims in Aetna's life, health, disability, property and casualty insurance lines take at least three weeks to process.

Chief technology officer R. Max Gould said he hopes to automate the process using rules-based decision systems so that customers who make routine claims can get a check within 24 hours. About 80% of claims are considered routine.

Long-term goals

Gould said he wants to have a plan in place within the next 12 months and wants to complete the project in roughly three years.

He envisions similar automation for the enrollment process, giving advice on preventative medicine to customers in Aetna's managed health care plan and offering investment and savings advice to Aetna's financial-services customers — without human intervention in most cases.

"The machines will do the easy ones. We'll let the human beings do what they do best, the complicated ones," Gould said. "Most of these business-process automation plans bog down because they want to automate everything. We'll avoid that by concentrating on the things that can be automated easily."

Gould, 56, took over in early August as chief technology officer for Aetna in Hartford, Conn. Previously, he worked 25 years at Citicorp.

Gould's predecessor at Aetna, John Loewenberg, left to work at competitor Connecticut Mutual Life Insurance Co., where he is chief administrative officer of operations.

Aetna's R. Max Gould *would like to complete the firm's automation within three years*

Move from mainframes

Not surprisingly, Gould said he plans to use information technology as a lever with which to continue pushing Aetna toward financial recovery.

"In a financial services company," Gould said, "the [information technology] process is very much the product."

The company last year saw net income of $468 million on sales of $17.5 billion, following losses of $588 million in 1993.

Gould has inherited an IS department that already is well on its way to client/server computing.

Every employee has at least one PC on his desktop, and the company has standardized on Microsoft Corp.'s Office applications.

The company has completed about 60% of a transition to Microsoft's Mail. When the standardization on Mail began, the company used 19 different electronic-mail systems, mainly IBM's Professional Office System.

Most of Aetna's business-critical processing is done on mainframe systems in two data centers. Gould said he would like to move that work to distributed systems.

The mainframes will be used, indefinitely, for long-term data storage.

"If you have to access the data infrequently, but you're required by government regulation to keep the data for the lifetime of a person, what else do you do but keep it on the mainframe?" he said.

In the meantime, Gould's claims-automation plans will put Aetna ahead of its competition in technology innovation, according to Ann Purr, assistant vice president for information at the Life Office Management Association, an insurance industry trade group based in Atlanta.

Aetna's IS department

Aetna is standardizing on Microsoft's Mail, trimming down from 19 different mail systems.

The IS department comprises the following:

- 40 central IS personnel
- 4,000 staffers reporting to business managers worldwide
- 48,000 PCs
- 42,600 users
- Two mainframe data centers

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Telecom firms join systems integration fray

By Neal Weinberg

The top U.S. telecommunications companies are trying to extend their reach into the enterprise by offering complete systems integration services.

Toward that end, MCI Communications Corp. in Washington recently took the acquisition approach, paying $1 billion for Canadian systems integrator SHL Systemhouse, Inc. MCI quickly announced the availability of consulting and network management services, plus the installation of voice and data systems.

AT&T Corp. in Basking Ridge, N.J., hired industry heavyweight Victor Millar away from Unisys Corp. earlier this year to build a consulting and systems integration business from scratch. AT&T Solutions last week announced a major contract win and the hiring of three executives to its management team.

Sprint Corp. in Westwood, Kan., has yet to jump into the game, but not for lack of trying. Merger talks with $10 billion systems integration powerhouse Electronic Data Systems Corp. broke down last year.

"We certainly think this is a trend in the industry," said Bonnie Digrius, an analyst at Gartner Group, Inc. in Stamford, Conn. The major carriers were first, but others will soon follow suit, she said.

The benefit to users is one-stop shopping. "Clients are tired of going to 20 different companies to fulfill all of their technology needs," Digrius said.

Sold!

MCI buys SHL Systemhouse for $1 billion

Company	MCI Communications	SHL Systemhouse
Headquarters	Washington	Ottawa
Annual revenue	$13 billion	$1.2 billion
Business	Telecommunications	Systems integration

The works

The telecom firms will be able to send one bill to the customer and deliver "an absolute, complete full range of information technology services — voice, data, the whole ball of wax," said Tim Bourgeois, an analyst at International Data Corp. in Framingham, Mass.

Jim Garlans, manager of network services at United Technologies Corp. (UTC) in Hartford, Conn., said he has been pushing MCI to offer a more complete range of services. "We've been trying to force them into it," he said.

Garlans said UTC wants MCI to do more than just service the company's private lines. "We want them to take care of everything," he said.

FMC Corp., a Chicago-based manufacturer that has outsourced many of its information systems functions to SHL Systemhouse, is also looking forward to the benefits of the acquisition. "We see it as a plus" because it could lead to additional service offerings down the road, a company spokesman said.

But moving into this new arena poses challenges for carriers, Digrius said. They must make the transition from a stodgy product-oriented culture to a faster-paced, people-oriented services business.

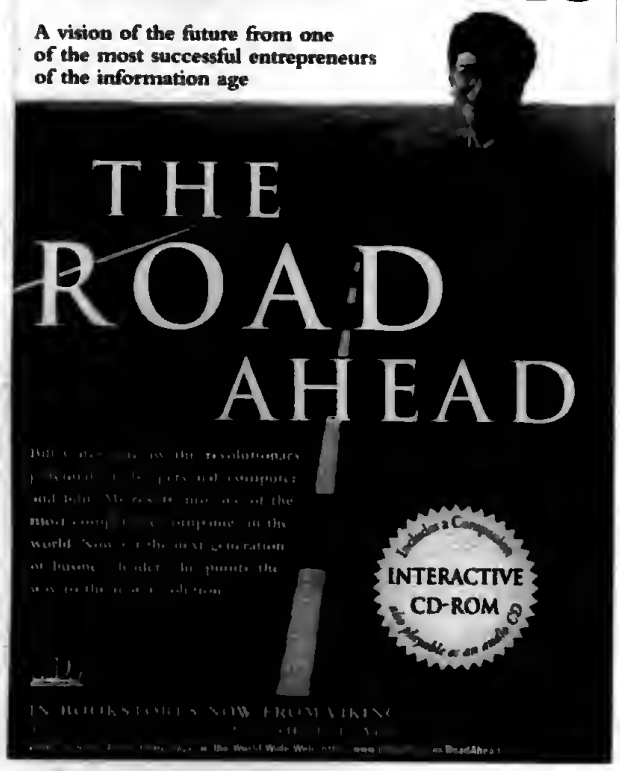
She said MCI should consider bringing in a new management team to run the systems integration business because current MCI executives don't have the necessary services background, and Ottawa-based SHL Systemhouse has been somewhat of a laggard in a fast-growing market. MCI declined to comment on possible management changes.

One factor that bodes well for the MCI/SHL marriage is that the companies share the culture of the feisty underdog — MCI has been nipping at AT&T's heels, and SHL has been trying to break into the U.S. market as a north-of-the-border outsider, Bourgeois said.

He added that the market share of the telecom firms today is tiny compared with that of the established systems integrators. But the growth potential is there, he said, as computers and telecommunications converge in the future.

BILL GATES

A vision of the future from one of the most successful entrepreneurs of the information age



Usage pricing

CONTINUED FROM PAGE 73

use hand that allows customers to reduce their bills, he said.

The usage pricing model holds out the carrot of shaving as much as two-fifths off the cost of traditional mainframe software licenses based on processor capacity, analysts said. But depending on the product, resource consumption typically has to be no more than 10% to 20% to get any savings.

"IBM is basically walking a tightrope," said Carl Greiner, an analyst at Meta Group, Inc. in Stamford, Conn. The computer giant has to make mainframe software pricing more flexible and less prone to cause sticker shock, but it can't afford to give up huge wads of revenue, he said. This philosophy caused IBM to adopt a strategy that relies on some cautious first steps to help boost mainframe sales that pay for more aggressive pricing actions later.

The precarious balancing act means measured usage pricing only benefits "limited special cases or people who are testing new [applications] out," said John Phelps, an analyst at Gartner Group, Inc. in Stamford.

Sprint Corp.'s data center in Reston, Va., is one mainframe site that has been able to reap some dividends.

The facility saved about 20% on its monthly IMS bill and 10% on CICS fees by switching to the usage-based approach, and it expects a similar reduction on DB2, said Roy McCullough, team leader for MVS services at the data center.

But the Reston operation primarily runs batch processing jobs to prepare bills for calls made over Sprint's public data network, McCullough noted. "We're really just getting fed lots of call-detail records from minicomputers," he said. "We're not your classic transaction processing shop."

Certification

CONTINUED FROM PAGE 73

from outside companies to test the validity and reliability of their exams and to help administer them. All of the companies, especially Oracle, drew on their user communities for input about the content of the tests.

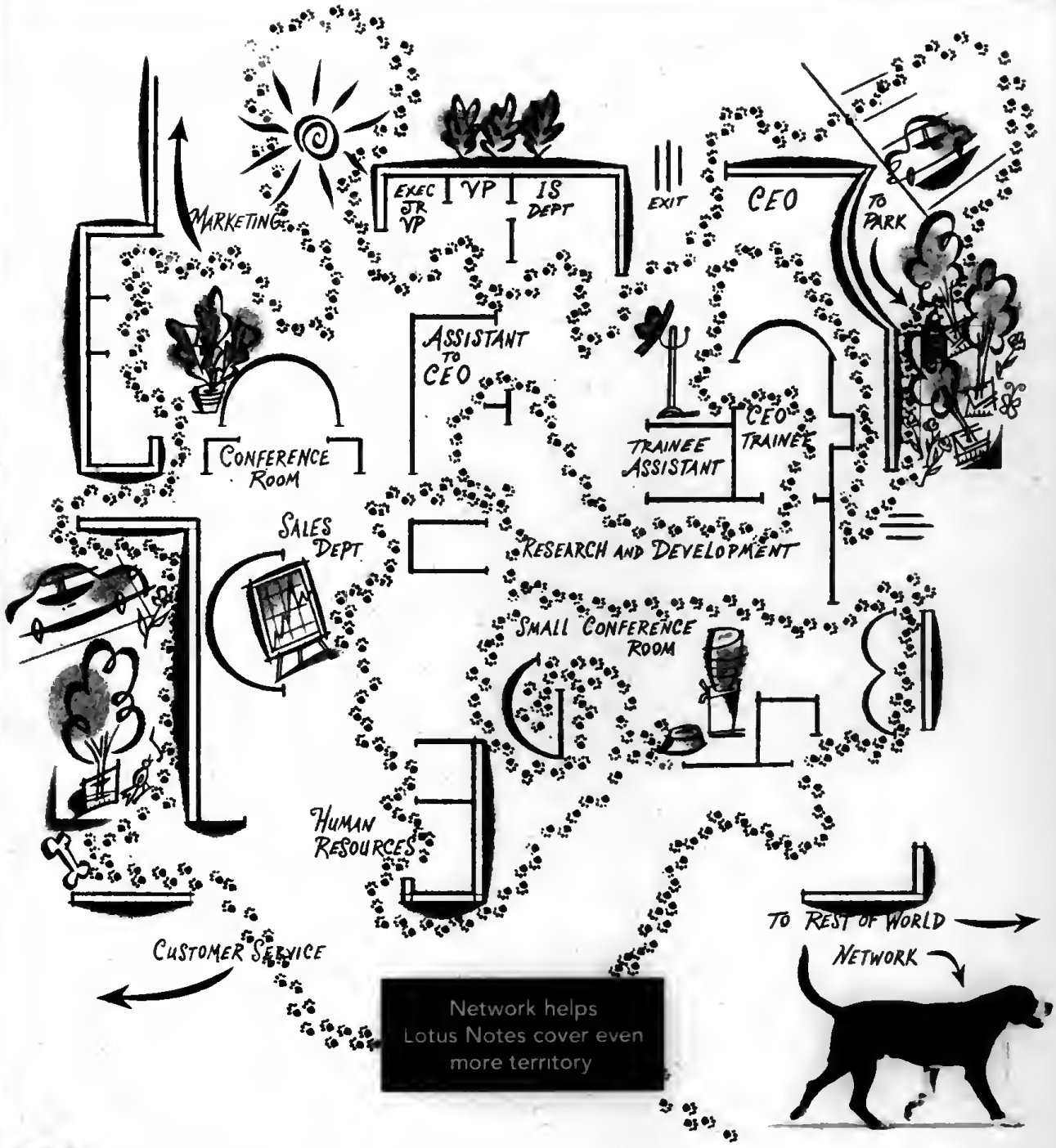
Be prepared

The vendors also offer preparatory courses. A secondary market for cram courses also has emerged from vendors such as D.O.C. Software Corp. in Danbury, Conn.

The lack of Informix certification wouldn't exclude a potential database administrator from being considered for a position at Good Guys, Inc., an electronics retailer with headquarters in Brisbane, Calif. But certification "provides a constant in the hiring process, some proof beyond what could be biased recommendations," said Sharon Zeff, a project leader at the company.

"We know the Oracle test is very difficult, so it's a reasonable measure of whether someone is good," said Rich Niemic, executive vice president at The Ultimate Software Consultants, a consultancy in Naperville, Ill.

Employers interviewed said an employee who failed an exam wouldn't necessarily be dismissed. But most would want the person to have more training.



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Application Development

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Gupta hangs tough

Arthur Andersen's departure as auditor doesn't affect customer loyalty

By Frank Hayes

Users say they aren't concerned about the latest problem to plague Gupta Corp.: a dispute between the company and its auditor. The dispute has resulted in the auditor's departure and an exchange of insults between the two parties.

Arthur Andersen quit as auditor after Gupta implied that the Andersen partner assigned to the account wasn't performing properly. In turn, Andersen told the Securities and Exchange Commission (SEC) that Gupta's acting chief financial officer wasn't competent, according to Gupta documents given to *Computerworld*.

Andersen's withdrawal comes in the midst of a shareholder lawsuit and follows more than a year of red ink for Gupta. But users of the company's flagship SQLWindows software development system said they are unfazed by the new troubles.

"I don't give it a second thought," said Richard Taggs, president of Object Systems, a Washington software consulting firm. "Even if Gupta has financial problems, there are people like IBM and Computer Associates who are actually shopping for good technology."

Meanwhile, seven other users and Gupta business partners agreed that they aren't going to abandon SQLWindows. In fact, sales of SQLWindows rose to $35 million in 1994 from $21 million in 1993, according to Tracy Corbo, a senior research analyst at International Data Corp. in Framingham, Mass.

"We keep seeing the market going up and down for Gupta and have heard all sorts of takeover rumors, so personally I'm not very concerned about what's going on," said Brian DiMatteo, senior consultant at Grant Thornton in Minneapolis, which trains developers in SQLWindows.

Gupta's dispute with Andersen is unusual because of the harsh words exchanged between client and auditor.

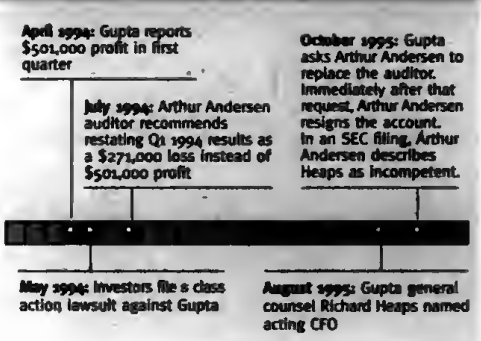
The Menlo Park, Calif., software tool maker had been at odds with Andersen for more than a year, according to Gupta general counsel Richard Heaps, who was appointed acting CFO in August. In mid-1994, the accounting firm threatened to quit if Gupta didn't accept its recommendation to restate the financial results for the first quarter of 1994, Heaps said. Gupta did adjust its first-quarter 1994 results from a $501,000 profit to a $271,000 loss.

More than a year later, the company asked Andersen to assign a different partner to the account when it faced a shareholder lawsuit based on that disputed quarter. That request was tantamount to suggesting the Andersen partner was incompetent or worse, according to observers familiar with accounting practices.

In response, Andersen resigned and wrote its Oct. 20 letter to the SEC. In an unusual public display of its unhappiness with Gupta, the firm said in the letter that "the individual who has been appointed chief financial officer [Heaps] does not in our opinion have the commensurate level of experience or competency to perform in that role."

The accounting firm said it would not comment further. Gupta Chief Executive Officer and Chairman Umang Gupta said in a prepared statement that the company has "complete confidence" in Heaps.

Time enough for trouble



Sources: Gupta, SEC filings

Briefs

TI to ship Composer

Texas Instruments, Inc.'s software unit in Plano, Texas, has announced Composer 3, a version of the computer-aided software engineering system formerly known as the Information Engineering Facility (IEF). Composer 3 supports IEF's traditional style of analysis, design and development, as well as rapid development of client/server applications from components. The release, which can also be used to develop applications for the Internet, will ship this month. Pricing starts at $14,000 per seat on Windows or OS/2.

Coopers & Lybrand sets methodology

Coopers & Lybrand in Princeton, N.J., has unveiled a version of its software development methodology. Summit-D 3.0 includes an architecture and infrastructure planning module for client/server projects, as well as support for object-oriented analysis. Coopers & Lybrand has also rolled out Summit PM, a graphical software package for using and customizing the methodology that includes a process management system for planning, tracking and reporting on development progress.

Seer goes BackOffice

Seer Technologies, Inc. in Cary, N.C., recently said it will integrate support for Microsoft Corp.'s BackOffice suite into its Seer HPS client/server development system. Seer, which was once 40% owned by IBM, formerly required IBM's OS/2. The system will now let Windows NT be used as a development platform, application server or repository for software developed with Seer HPS. The NT versions will ship in the first quarter of 1996.

@Talkback@cw.com

WE ASKED: Do you think C++ is ready for prime time? Is it used in your workplace? What would C++ need for you to use it?

YOU SAID:

C++ is not a "user-friendly" language for business. It requires additional code libraries for database access functions. C++ is somewhat cryptic and hard to maintain. C++ does not boost programming productivity. Replacing a C++ programmer is more difficult because there are fewer of them

■ Bob Burkett
xbasebob@msn.com

No!! [it's not ready for prime time]. Yes, [we do use it]. The lack of [C++] standards and structured development tools and practices contributed to massive cost and schedule overruns. C++ needs standardization, validated versions, substantially reduced fault rates, wider-spread knowledge of Software Configuration Management and development practices that will produce long-term sustainability.

■ Charles A. Harris
harrisca@post7.laafb.af.mil
72274.1157@compuserve.com

C++ is definitely a viable application development strategy for corporations. A good C++ developer can develop apps almost as fast as another person using PowerBuilder, Visual Basic, etc. And the C++ app is almost certain to be faster and function better, and it can also go anywhere they want it go.

I have several C++ programmers on staff. They are by far the most productive programmers I have.

■ Ken Moss
President, Moss Micro
kmoss@mossmicro.com

Yep. C++ is more than ready for prime time. It may be true that C++ is harder to follow than Visual Basic/PowerBuilder, but the language is very powerful. For scientific/industrial/manufacturing/engineering applications, there is no substitute for C++ with [graphical user interface] tools such as MFC/OWL.

■ Bipin Pradhan
bipin.pradhan@Analysts.Com

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Source: Survey of COMPUTERWORLD CD subscribers, May 1993.

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Spacetec IMC Corp. has introduced 3D-I Always for Windows, a productivity tool for three-dimensional design in Autodesk, Inc.'s AutoCAD.

According to the Lowell, Mass., company, 3D-I Always for Windows eliminates the setup steps for rotations, pans and zooms for AutoCAD 3-D modeling. The product also lets users perform each of these tasks within an active AutoCAD view port.

3D-I Always for Windows has three 3-D control methods for model manipulations in AutoCAD: Dynamic Mouse Control, PushSlider Control and Keyboard Control. It can perform AutoCAD actions, including hidden line removal or rendering, immediately after the user stops moving the model. Command-line equivalents are provided for all functions.

3D-I Always for Windows costs $295.

▶ *Spacetec IMC*
(508) 970-0330

JBA International, Inc. is offering free trials of Guidelines, a client/server development environment.

According to the Mount Laurel, Md., company, Guidelines was designed for development teams currently programming in Cobol, Basic, RPG, C and C++. It lets these developers create programs that run on PC and server platforms. Within Guidelines, developers can code directly in C++ or in JOT, a high-level object language. JOT allows the coding of event-driven applications, which provides direct access to server technologies. Guidelines generates portable and flexible C++ for compilation on the designated target environment.

JBA International's World Wide Web address is: http://www.jba.co.uk.

▶ *JBA International*
(609) 231-9400

Peabody Systems, Inc. has announced KIPP Developers Toolkit for Unix.

According to the Orange, Calif., company, KIPP (Kofax Image Processing Platform) Developers Toolkit for Unix lets Unix developers integrate high-volume document imaging technology with workstations. The tool kit includes all of the features found in Kofax Image Products, Inc.'s KIPP Toolkits.

Scanners with video interfaces are supported by KIPP hardware accelerators. Supported platforms include IBM's RS/6000 and AIX, Hewlett-Packard Co.'s HP 9000 and HP-UX and SCO, Inc.'s Unix/OpenServer. It also supports a range of video, SCSI scanners and image printer peripherals.

Pricing for the KIPP Developers Toolkit for Unix starts at $1,495.

▶ *Peabody Systems*
(714) 639-8643

Platinum Technology, Inc. has introduced InfoSession 2.0.

According to the Oakbrook Terrace, Ill., company, InfoSession 2.0 lets users reliably incorporate all of the functionality (including inquiry, update and delete) of existing legacy applications into new workstation applications. It also integrates multiple applications into a single interface.

InfoSession 2.0 includes TCP/IP connectivity. Pricing starts at $52,690.

▶ *Platinum Technology*
(708) 620-5000

Serena Software International, Inc. has introduced X:Change, a cross-platform development environment.

According to the Burlingame, Calif., company, X:Change provides a fully graphical environment for providing connectivity between IBM's MVS and OS/2 and Microsoft Corp.'s Windows 95 and Windows NT client platforms. It was designed for developers who build mainframe and client/server application software in PCs.

X:Change lets users simplify a range of cross-platform tasks, including software and data transfers, data set scans on files and members, text string scans, job output display and file synchronization between OS/2, Windows 95, Windows NT and MVS.

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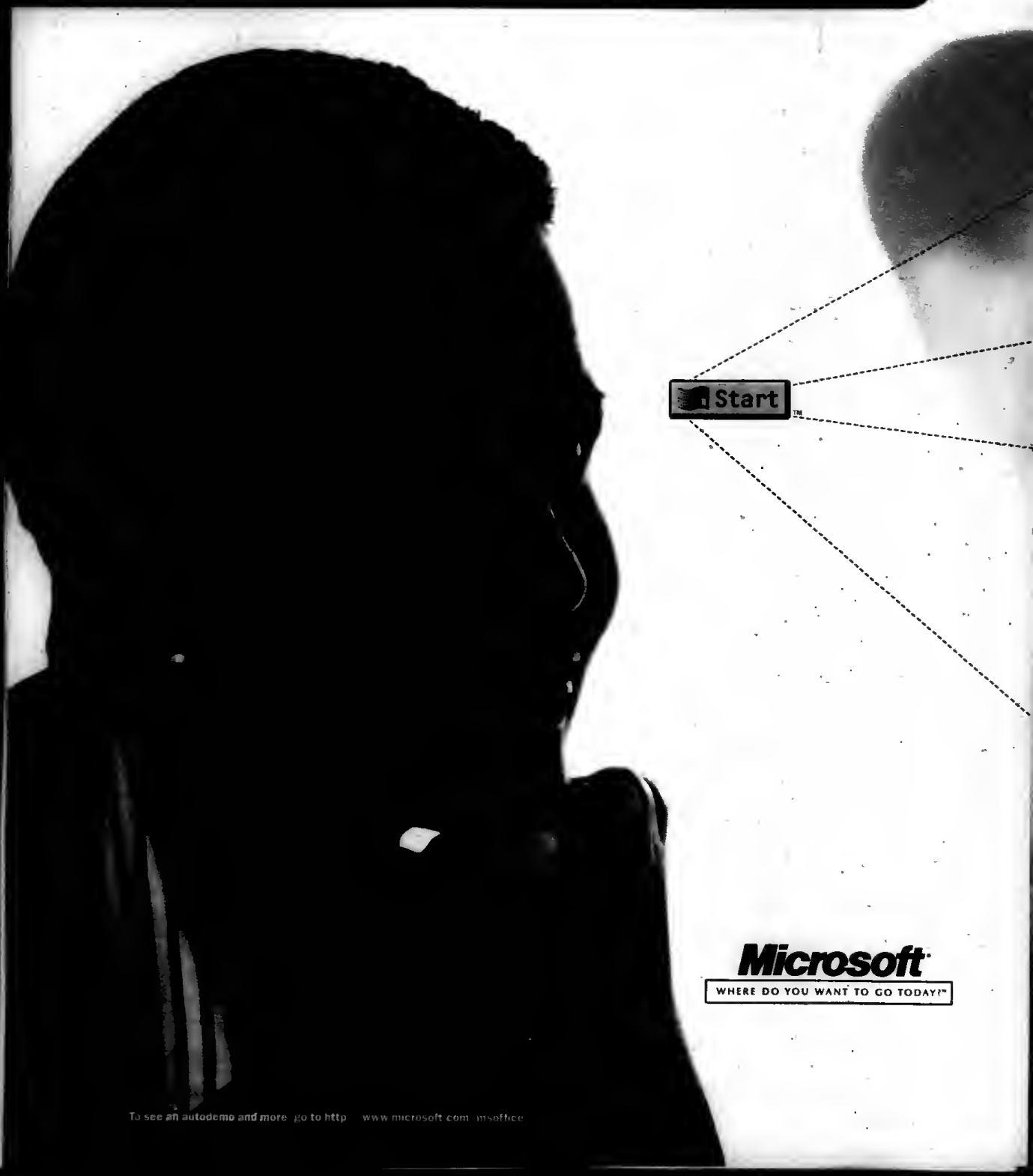

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Management

INSIDE:
Calendar, **page 92**
Disease management, **page 92**
High-performance IS organizations, **page 93**
Executive Track, **page 93**

Can't find a good trainer? Try harder!

WORD OF MOUTH IS STILL THE NO. 1 WAY IS MANAGERS FIND TRAINERS. BUT CALLING YOUR OLD PAL FRED ISN'T ENOUGH TO HELP YOU FIND A GOOD ONE. HERE'S WHY.

BRIAN SPROUSE

By Monua Janah

Information systems managers could use a training class in finding and assessing trainers.

As rigorous as they are about making technology purchases, IS managers often do little more than ask their friends when it comes to finding trainers and training firms. They simply haven't found other ways that work.

And IS managers are no more systematic when it comes to tracking the performance of the trainers they do find. They may gauge the value of a single class or program, but they lack precise ways to assess the overall impact of training on individual and organizational productivity.

Bob Monastero, director of human resources for information management at Xerox Corp. in Rochester, N.Y., is certainly willing to go the extra mile to find a good trainer. His firm goes to considerable lengths to get feedback on the trainers it hires and evaluate the progress of employees undergoing training.

Want a trainer? Ask a friend.

Sources of information about trainers, according to Dataquest

1. Word of mouth
2. Referrals
3. Past relationships with the trainer or training firm
4. Conferences, seminars, trade press articles

Source: 1995 survey of 100 corporate IS executives by Dataquest, Inc., San Jose, Calif. Responses are listed in order of importance

Try harder! *page 89*

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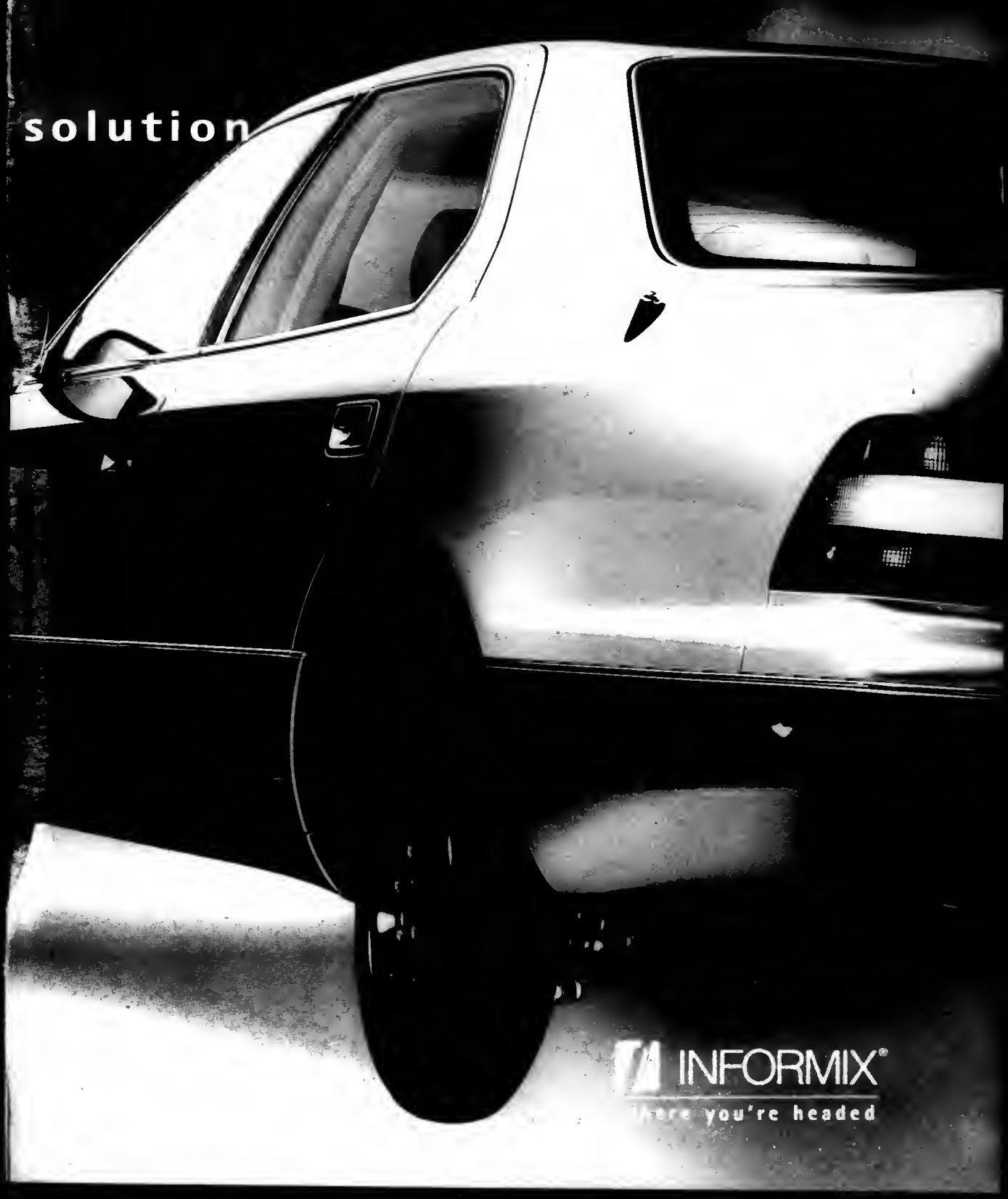
		Promised 1996
		Promised Q1 '96
		Not yet promised
		Proprietary OLAP

Research Group, Parallel Database Technology: An Evaluation and Comparison of Scalable Systems Published 1995.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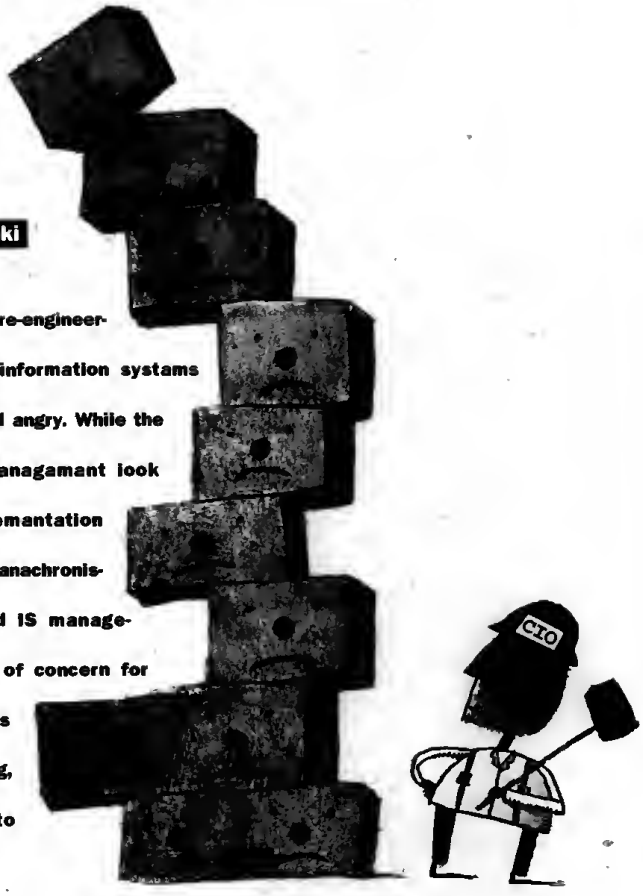
November 27, 1995 • Volume 1, Issue 10

COMPUTERWORLD

·*Leadership Series*·

By Robert A. Zawacki

Downsizing and re-engineering have left information systems staffers exhausted and angry. While the results of change management look good on paper, implementation often fails because of anachronistic organizations and IS management's seeming lack of concern for people. The solution is not more re-engineering, but more attention to the human side of IS.



Rebuilding the IS organization

In today's post-downsizing era, most information systems organizations are no longer cutting fat, they are cutting muscle. It's not unusual to find three people doing the work that was done previously by 10. Add the latest change-management initiative to this pressure cooker and you have a recipe for organizational disaster.

At the root of this problem is a dysfunctional organizational structure that was designed for business in the 1950s. IS management must remake the IS organization, before introducing yet more change.

Some companies such as Alcoa, ITT Hartford and Texas Instruments are ahead of the curve. They are transforming their IS departments from top-down bureaucracies into flat, team-based organizations. Their IS leaders share some common traits: They set and communicate explicit strategic goals; they accept that their organizations are constantly evolving; and they continuously embrace learning and renewal. Their focus is on process and projects, not hierarchy.

There are two components to building a more productive IS organization: A plan or road map to show where you are and where you need to go and an understanding of what motivates IS people.

Re-engineering has bred loathing and distrust into IS staffers. But the problem is not with the re-engineering, it's with the shape of the organization itself.

In planning the future of the IS department, the senior manager must lead in breaking down the old hierarchy. He must encourage his staff to question outdated, unproductive practices and, finally, he must give them the tools and authority to make meaningful change. (See box on facing page.)

The IS leader must also factor in the personalities of and dynamics within his staff. As a rule, IS professionals share three traits. First, they thrive on challenges and meaningful work. Second, most have little need for social interaction, on or off the job. Putting them into new work environments that require greater personal interaction, such as teams, may not enhance performance. Finally, they are unsatisfied with the feedback they receive from their supervisors, perhaps the result of their supervisors' own disinclination for personal interaction.

To rebuild the IS organization, the chief information officer must work to modify these traits.

testing the theory

While few IS departments have been completely successful in implementing change programs, some have managed to avoid disaster. Two years ago, a large manufacturer in the Midwest downsized its IS department from 600 people to 400 and hired outside contractors to supplement its remaining workforce. A new CIO, we'll call Dan Niven, was hired shortly after the downsizing. At the same time, the company's business units were working with the IS department to implement a client/server architecture.

When Niven came on board, he realized that trust within the IS department was extremely low and the business units lacked confidence in his department. The layoffs had not been sufficiently explained to demoralized IS staff, and business units complained they were not getting the service they needed. Niven understood that the IS department's future (and his own) was directly linked to improvement in its ability to serve the business units. His first objective was to rebuild the IS organization.

strategic alignment

Niven first met with senior staff to discuss the department's ability to support the business units. What was working? What wasn't? How could the IS department

Cover and inside illustrations by James King

Five Steps to Reenergize Your Staff

1. Vision and values. Most IS organizations feel alienated because their vision and values are handed down from on high. The solution is to invent their own goals, the only constraint being that the goals must be aligned with the company's goals. Creating meaningful goals means benchmarking the performance of key processes at other IS organizations and getting IS staffers to volunteer for "learning assignments" (e.g., specific technical, business and human-skills training).

2. Bureaucracy bashing. Employees should be encouraged to question the need for every meeting, every form, every process. Eliminating unnecessary or low-priority work will begin rebuilding trust in IS management. Show you are committed to the process by quickly eliminating some particularly onerous procedures.

3. Empowerment. Empowerment means nothing more than pushing decision-making down the organization's hierarchy to the person who has the greatest knowledge. The easiest way to tell if empowerment is alive and well, is to watch the IS manager during a crisis. Does he revert to an autocratic, top-down style? Or does he rely on his people to make tough decisions?

4. Continuous improvement or *kaizen*. A recent study by the American Quality Foundation found that most TQM programs are a bust because they try to implement thousands of new practices simultaneously. Add the fact that most employees are overworked and underappreciated, and it becomes clear that any complex re-engineering program is in trouble. Instead, small, incremental changes made over time must become standard operating procedure at all levels of the IS organization.

5. Strategic cultural change. If strategic alignment, bureaucracy bashing, empowerment and continuous improvement are implemented properly by IS leaders, then staff will feel valued and the organization will flourish. One feeds on the other.

improve its responsiveness? Why was confidence so low? Were there any IS organizations worth emulating? The session was videotaped, and the rank and file who had not attended the session viewed the tape. Thus, he sent a message that the department was gearing up for change.

Niven then met off-site with his 20 senior IS managers to review objectives and desired outcomes. They also discussed developing a communications plan, which included details for achieving alignment with the business units and for increasing the IS organization's focus on customer service. His plan also called for the group to develop strategic and tactical goals. Niven insisted that the plan include follow-up benchmarking of various IS functions so progress could be measured and documented.

At the off-site meeting, the group was divided into two and instructed to brainstorm the values they wanted to live by. When they merged their lists into one, they agreed that IS would have a working culture based on trusting and valuing individuals, with open communication and relationships. Flexibility and sensitivity to customer needs would be encouraged and department culture would be non-threatening. Finally, the leadership group agreed that given clear vision, values and objectives from the leadership team, IS people were capable of managing themselves.

The groups then worked on a vision statement using the same brainstorming process. Consensus emerged around four themes:

1. Improving external customer service
2. Becoming the technology center of choice for the business units
3. Delivering high-quality technology solutions
4. Valuing IS personnel.

With these points representing the IS vision, the IS leadership team's discussion turned to developing strategic and tactical goals. The group identified five strategic goals that included the implementation of cutting-edge technology, hiring, training and retaining superior people, becoming a learning organization based on empowered teams, and evaluating the outsourcing of noncritical IS functions. Niven assigned three or four people to begin working on each goal.

To break down barriers and minimize turf issues, for example, he assigned a cross-functional team from different IS departments to work on developing client/server implementation. Teams were also assigned to benchmarking and baselining projects.

The benchmarking team of eight people — including two programmer/analysts — visited two non-IS organizations and two high-performance IS organizations to identify and measure their best practices in client/server, self-directed team and outsourcing, and to examine the human resource systems that support these processes. After each trip, the team shared its findings with the IS leadership team.

The baselining team was charged with evaluating the human side of IS. Because people costs represent approxi-

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mately 55% of the total IS budget, a baseline is essential to demonstrate improvements to senior management. Using a standardized questionnaire (The Job Diagnostic Survey–Information Technology) that measures 28 human variables for 37 different IS jobs, the team surveyed the IS department and compared the results to international norms to determine the match-up of people and their jobs. This is a key element that has been shown to explain 60% of job satisfaction and productivity.

Results of the survey indicated that many IS staff members were overqualified for the jobs they were doing, and their jobs were defined too narrowly. While supervisors were good about setting goals, employees complained that they lacked autonomy and didn't receive adequate feedback.

Niven insisted that the survey be readministered periodically to document progress. This began a continual evaluation process as the IS organization moved from a reactive to a proactive role with the business units and rebuilt trust with its customers.

bureaucracy bashing

At the first meeting of the full IS staff after the leadership meeting, Niven created a bureaucracy-bashing team. He gave 10 volunteers their mission, which was to question every report, every approval level, every measurement and every meeting – with the objective of reducing the workload of individuals.

The team met weekly for four months and generated over 80 recommendations. For example, Niven's two-hour meeting with department leaders every Tuesday and Thursday was cut to one hour once a week, and bureaucracy bashers insisted they stick to a firm agenda. The team also recommended that a requirement of five signatures on travel requests be reduced.

Niven then assigned a team to evaluate the recommendations and make

Accounting for Personalities

After 20 years of investigating what makes IS professionals tick, I have identified three immutable characteristics. Typically, IS professionals have the following: (1) a high need to achieve results and do meaningful work, (2) a low need to interact with people, and (3) a belief that they receive inadequate feedback from their supervisors.

Meaningful work consists of five things: Using a variety of skills and abilities; seeing the big picture and knowing that the work they are doing is important; having a sense of autonomy; receiving good feedback on achieving goals; and knowing what their future work will be. If IS professionals are doing meaningful work, they tend to work too hard. If they are doing less than meaningful work, they become bored.

Given the personality profile of IS professionals, here are some recommendations for IS managers:

1. *Resist the temptation to hire only people with superior technical skills.* By hiring technical people who are also adaptable and good communicators, you can improve the overall effectiveness of your department.
2. *Give people meaningful work, set goals that are challenging but achievable in a reasonable time frame, give them a deadline and then get out of the way.* Individual productivity leads to high job satisfaction.
3. *Improve feedback between managers and individual staff people.* Poor feedback is a major problem, and much of the blame lies with the IS manager. Formalize the review process within your department and make reviews a mandatory part of each manager's job.
4. *Develop a strategy to decrease the number of IS people who demonstrate a low need for human interaction.* Consider training your people in negotiation and conflict-resolution skills while at the same time changing your hiring criteria to include teamwork skills.
5. *Set up assessment centers and select future IS managers not only for their technical skills but for their communication and coaching skills.* Some portion of a candidate's promotion potential (and salary) should be based on input from the project team and the customers.
6. *Sign yourself up for formal training in selection techniques, goal setting, feedback and career development processes and communication skills.*

some "quick strikes" on top-priority targets to demonstrate the new values and behavior. Three recommendations were approved, implemented, and the results were communicated through the department's newsletter.

employee empowerment

By measuring the baseline, communicating the values and vision, increasing the alignment of strategic and tactical objectives and including nonmanagerial people on the bureaucracy-bashing and benchmarking teams, IS leadership began to rebuild trust. As IS professionals began to realize that the change effort was more than talk, their behavior started to change.

To maintain momentum, supervisors began holding off-site team-building sessions with their staff, where the IS organization's vision and strategic goals were reviewed and participants discussed how their projects supported those goals. The participants also talked about behavior valued in team members and things that were keeping the team from being more effective. These team-building sessions increased alignment and focus, and the process reinforced the new values. The sessions also created a deeper commitment to the goals of the organization among the rank and file.

The leadership group also launched a pilot project to move toward three levels of management, instead of five levels. This pushes decision-making further down in the organization and reinforces the principles of empowerment.

continuous improvement

After starting to rebuild trust, the IS leadership relaunched its quality program, which was begun under the previous CIO but existed in name only. The program included standard continuous quality improvement techniques. In one case, the applications development director assembled a group of volunteers to serve as an improvement team to look at a few key processes within the department with the goal of continuing improvement. The director emphasized that the key to a successful quality program was for the people in the department to own the program and produce not one-minute fixes, but a series of coordinated steps that combine to make the applications area more productive.

In the short run, employees work longer and harder out of fear. In the long run, all human energy is volunteered.

cultural change

Fifteen months into the change process, Niven administered the Job Diagnostic Survey again, and the IS department showed dramatic improvement in job satisfaction, meaningfulness of work, participation in setting goals and commitment to those goals. The results were shared with the CEO and business unit leaders.

The improvements came in spite of considerable turmoil and uneasiness about the new directions that Niven was taking the IS department during the first two years of change. However, as the leadership team maintained a focus on its vision and goals and analyzed its decisions to learn from previous mistakes, the organization became more productive. Management attacked problems and not people, individual staff members noticed that something was different and felt the effects of a new energy and new culture in the IS department. As a result, ratings of the IS department given by customers improved.

Above all else, as IS leaders rebuild their IS departments, they must be sincere. A manipulative leader cannot sustain change because creative and innovative people will see right through him. The best people will leave the organization first, and a downward spiral back toward the old organization will be inevitable.

The key for successful IS leadership is to teach the organization how to learn. It begins with the process outlined above, but must be reinforced constantly with new behavior. The journey is not easy; but perseverance will lead to competitive advantage. ♦

recommended readings

Organization Development and Transformation: Managing Effective Change, by Wendell L. French, Cecil H. Bell and Robert A. Zawacki, Irwin Publishing, 1994.

Beyond Certainty, Charles Handy, Hutchinson Publishing, 1995.

Discontinuous Change, David Nadler, Robert Shaw and A. Walton, Jossey-Bass Publishers, 1994.

Creating Tomorrow's Organization, David Birchall and Laurence Lyons, Pitman Publishing, 1995

About the Author

Robert A. Zawacki, Ph.D., is professor emeritus of Management & International Business at the University of Colorado and distinguished scholar in residence KPMG Peat Marwick. This article is based in part on his 1995 book *Transforming the Mature Information Technology Organization: Reenergizing and Motivating People*, with co-authors Carol A. Norman, Paul A. Zawacki and Paul D. Applegate. Zawacki can be reached on the Internet at robertz@zawacki.com.

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Can't find a good trainer? Try harder!

CONTINUED FROM PAGE 85

Nevertheless, Monastero says the best way to find good trainers is to network with other IS managers. Although he's tried other ways, such as using directories of trainers or contacting training organizations, these techniques "are just not substantive," he says.

Monastero represents the mainstream of opinion, according to recent surveys (see chart). Jack Tumminello, president of Seminar Superstore, a Cambridge, Mass., firm that sells more than 150 training programs, says he has seen the same preference amongst his IS clients. "Word of mouth rates pretty high. There's a natural tendency to want to trust a colleague," he says.

However, personal recommendations often aren't sufficient to make good training decisions.

Sometimes, finding the right trainer is tough because companies moving to new technologies haven't figured out what the training should entail. Even when they do define requirements, it's difficult to estimate how much training is needed.

When The Amerisure Cos. recently downsized from a mainframe to a client/server setup, the company underestimated the amount of training its IS staff would need to function effectively in the new environment, says Frank Petersmark, technical services manager at the Southfield, Mich.-based insurance company.

There's another problem with the word-of-mouth approach: IS managers lack reliable return-on-investment data or performance metrics to share with one another.

"In most cases, companies don't have the metrics to measure the success of a course," says Christine Ferrusi Ross, an analyst at Dataquest, Inc. in San Jose, Calif.

In a recent survey of 100 companies, International Data Corp. (IDC), a research firm in Framingham, Mass., found that 81% don't measure the return on investment from their training. "They think it's important, but they're not doing it," says Ellen Julian, a senior analyst at IDC.

Most IS managers conduct surveys after classes or courses to gauge the effectiveness of the trainer. For instance, Monastero says he conducts surveys after training classes and then follows up a month later by asking the trainees' managers for input.

But assessing whether the training improved the company's performance as a whole is difficult, says Jim Huckestein, division manager of educational services at Chevron Information Technology Co. in San Ramon, Calif. "You have to spend some time and work in developing [a return on investment], and training is a very small lever. There are a lot of other factors involved."

Time constraints and the lack of measurement tools prevent managers from doing studies that can assess the value of a trainer. Steve Hasenfratz, supervisor of data management at Union Electric Co. in St. Louis, says he doesn't use any broad measures of training's effectiveness. "I wish we did, but we don't," he says. "If you know of something, other than just noticing staffers' productivity gains, I'd like to hear about it."

How can IS managers improve their chances of finding first-class trainers?

Unfortunately, a clearinghouse of reliable information about trainers is close to impossible to find.

But IS managers can pull together and share training facilities with other firms. The Chicago Research and Planning Group, a 200-member association for chief information officers, plans to set up a training center in the Chicago area where vendors will offer courses at volume discounts for members.

IS managers should nail down the needs the trainers are expected to fill. A big part of that process is assessing the goal and the people being trained. "To take staff who have been working with Cobol and make them client/server programmers is a tough job," says Joe Tumminaro, president of J. Frank Consulting, Inc. in Palo Alto, Calif. "You have to do some assessing of the team and see if these people can be trained in different technologies."

Creating a training curriculum can be an even larger challenge. "The most difficult thing is to actually select a curriculum, not in particular the trainer," Tumminaro says. The reason: The IS manager may not know what should be on the curriculum. It's worth the effort to develop a curriculum first, he says. With goals and curriculum in hand, it's much easier to size up whether a trainer is right for the job.

Once a curriculum is chosen, the next step should be to create a structure for mapping trainees' long-term progress in each area. That helps measure the impact of training on the organization and the quality of the trainer.

Monastero is working on a skills data bank that maps technical and business skills to a menu of training programs. It also includes assessments of individuals' progress in each skill. At the start of the program, each staffer goes through an evaluation, including a self-assessment, to determine how much training they need.

As the need for reliable metrics about the effectiveness of trainers becomes more obvious, more companies are developing tools that aim to fill that need. Platinum Technology, Inc. in Oakbrook Terrace, Ill., is scheduled to release early next year Skill Tracker Plus, which assesses employee competence in various IS areas.

All these approaches will help, but it's tougher to find good technology trainers than good technology products. There's less information available about training than products, and yardsticks and data are meager. Unless you go the extra mile to track the effectiveness of trainers, there's still no better source for information than your friends in the profession. ■

Janah is a freelance writer in Palo Alto, Calif.

It's not what you spend, but whom you spend it on

The most important criterion IS managers use when selecting trainers is the quality of the instructors. Cost ranks fourth or fifth, according to IDC and Dataquest. (Responses are listed in order of importance.)

DATAQUEST	IDC
Quality of instructors	Quality of instructors and training materials
Reputation of the provider	Availability of courses
Willingness to customize training	Reputation of the provider
Cost	Whether the provider has a system to measure the effectiveness of its training
	Cost

Source: 1995 survey of 100 corporate IS executives

Source: 1995 survey of IS managers at 100 U.S. companies

COMING SOON: Certification

Managers starved for good trainers will soon get some help from the Educational Testing Service (ETS) in Princeton, N.J., the nonprofit organization that creates the Scholastic Aptitude Tests and other exams that torment college-bound teenagers.

ETS is developing a test for certifying technical trainers. The program, now in beta, will be up and running in January. It isn't the ultimate answer for beleaguered managers — it tests only for classroom presentation skills, not technical or product knowledge — but an ETS-certified trainer should at least know how to teach.

The Certified Technical Trainer Program is being developed with the aid of the Information Technology Training Association in Austin, Texas, and other organizations for computer industry trainers. That means a trainer with certification from both ETS and, say, Lotus Development Corp. might actually be an effective Notes trainer.

For information, call the ETS at (800) 258-4914, or contact it via the Internet at ctip@ets.org. — *Manua Janah*

@ Talkback@cw.com

How do you find trainers? Share your best practice tips with *Computerworld* readers. Send your suggestions via the Internet to talkback@cw.com, or fax us at (508) 875-8931. Direct your comments to Editor, Management.

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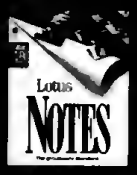

Choosing the right groupware is critical. Problem is, Exchange isn't groupware. It's messaging. And that's all it is. Microsoft wants you to believe that a messaging system is all you need. The truth is, only Lotus Notes includes world-class client server messaging integrated with a groupware

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infrastructure, to give your company the foundation it needs to compete. This means that your people can not only communicate, but collaborate in teams and, most importantly, build and deploy custom applications that coordinate mission-critical business processes like streamlining product development cycles and improving customer service.

Lotus Notes is here now. If you'd prefer something less, wait a while. It'll be here eventually.

'Disease management' comes to IS

Trend-setting health care providers build client/server systems to reduce the cost of treating chronic illnesses

By Linda Wilson

There's a new weapon in the fight against escalating health care costs. It's called "disease management" and it's catching on at Henry Ford Health System in Detroit, Sentara Health System in Norfolk, Va., and other health care institutions.

The concept is simple: Keep victims of chronic illnesses such as asthma or diabetes out of the hospital and the emergency room by teaching patients how to prevent the attacks that usually land them there.

DR. RICHARD WARD OF HENRY FORD HEALTH SYSTEM HOPES DISEASE MANAGEMENT SYSTEMS CAN PROVIDE BETTER CARE AT LOWER COSTS

Managing patients' care and education is increasing the demand for integrated information systems among "health care systems" — chains of hospitals, health maintenance organizations and other agencies that provide total medical care today ["Integration Fever," CW, April 3].

"We're interested in keeping patients well-maintained and in better health," says Dr. Richard Ward, director of Henry Ford Health System's center for clinical effectiveness and chief of clinical informatics research and development.

Health care chains are just beginning to tackle the information systems necessary to make such coordination among providers a reality.

IS executives at Henry Ford and Sentara Health reported on their efforts at a recent conference held by the College of Healthcare Information Management Executives in Ann Arbor, Mich.

Standard practices

Both health systems are developing real-time client/server expert systems to prompt caregivers to follow standard guidelines as they enter orders for care, such as prescriptions or lab tests, into a clinical system. The prompts will be based on standard practice guidelines that are developed through ongoing analysis of medical outcome and cost data.

The computing challenge? Figuring out the most effective, least costly way to manage huge quantities of information and creating systems to provide and process the information. Health care providers need on-line advice about the best treatment; hospitals need to track and analyze the results of each course of treatment to come up with these guidelines.

But it will cost millions of dollars and take years for hospitals to build these systems. Most hospital information systems still run in batch mode and are designed primarily to send out bills rather than monitor and evaluate care. ■

Wilson is a freelance writer in Glen Ellyn, Ill.

Calendar

DEC. 10 - JAN. 11

MANAGEMENT

International Conference on Information Systems (ICIS) '95. Amsterdam. **Dec. 10-13** — The premier academic conference on IS management. Theme: "Managing the Distributed Information Systems Infrastructure." The conference features paper presentations, panels and speakers. Topics include business value of information technology; managing distributed resources and conceptual modeling in systems development. Fees: $150-$900. Contact: ICIS Conference Registration, Rockville, Md. (301) 897-5768.

Joint Application Development (JAD) Session Leader Workshop Using Information Engineering. Greenwich, Conn. **Dec. 11-13** — Focus is on how to manage and facilitate JAD projects using information engineering and structured analysis. Fee: $1,275. Contact: Pierson Applications Development, Inc., Stamford, Conn. (203) 322-1606.

Renaissance of the Data Center: Seizing the Opportunity for Leadership. Scottsdale, Ariz. **Dec. 11-13** — Conference for data center and MIS executives and managers, and strategic information technology planners. Focus is on the centralized data center's return to power. Fees: $995 for Gartner Group, Inc. clients; $1,295 for non-clients. Contact: Ashley Pearce, Gartner Group, Stamford, Conn. (203) 316-6757.

Project World '95. Santa Clara, Calif. **Dec. 11-15** — For technical project management professionals and executives at technology-supported organizations. This year's conference has two new tracks: groupware and agile production. Contact: Donald M. Dible, conference director, Project World, Sunnyvale, Calif. (408) 739-4020.

Joint Application Development (JAD) Facilitation and Implementation Seminar Using Object-Oriented Software Engineering. Greenwich, Conn. **Dec. 18-20** — Focus is on how to manage and facilitate for JAD projects. The workshop provides training in the facilitation techniques necessary to capture deliverables for the object-oriented application development life cycle. Fee: $1,475. Contact: Pierson Applications Development, Inc., Stamford, Conn. (203) 322-1606.

International Association of Facilitators Conference '96: The Art & Mastery of Facilitation. Dallas. **Jan. 11-15** — Topics include group facilitation methods, strategic planning and computer-supported facilitations. Contact: Registrar, Wellesley, Mass. (617) 431-9797.

INDUSTRIES

National Center for Database Marketing (NCDM) Conference & Exposition. Orlando, Fla. **Dec. 10-12** — Conference for information systems executives and others in the database marketing field. Speakers include Esther Dyson of Edventure Holdings, Inc. Topics include consulting services, hardware, software, printing services, mailing services, fulfillment, list services, management systems and service bureaus. Contact: NCDM, Stamford, Conn. (800) 927-5007.

Marketing Mutual Funds on the Internet. New York. **Dec. 11-12** — Topics: "Integrating the 'Net in Your Overall Marketing Plan," "What's Wrong with Mutual Fund Advertising on the Internet and How to Fix It," "Establishing Security and Combating Cybercrimes on the Internet," "Transacting in Cyberspace — Obtaining Account Information and Trading Over the 'Net" and "Performance Measurement — Tracking Who is Using Your Internet Services." Fee: $1,195. Contact: IBC USA Conferences, Inc., Southboro, Mass. (508) 481-6400.

Developing and Implementing Strategies for Bringing Financial Products and Services On-line. New York. **Dec. 12-14** — Focus is on-line investing and banking. Topics: "Understanding and Capturing New Shareholder Servicing and Marketing Opportunities On-line," "The New On-line Distribution Channel," "Marketing Your Services to the On-line Investor," "How to Grow Your Brokerage Business by Going On-line" and "The Secure Web Platform: Protecting Electronic Commerce." Fee: $1,695. Contact: World Research Group, Inc., New York (800) 647-7600.

TECHNOLOGIES

Broadband Intelligent Networks: Critical Success Factors for Developing and Managing the Network as a Service Platform. San Jose, Calif. **Dec. 11-12** — For network managers who are integrating existing networks with growing internetworks in multimedia, multivendor environments. Topics: "Strategies for Evolving to Broadband Intelligent Network Architecture," "Broadband Access — Linking Current Status and Future Prospects," "LAN to ATM Migration" and "Infrastructure Complexity and Management Costs in Broadband Intelligent Networks." Fee: $1,095. Contact: IBC USA Conferences, Inc., Southboro, Mass. (508) 481-6400.

Fourth Annual World Wide Web Conference. Boston. **Dec. 11-14** — Sponsored by MIT and the Open Software Foundation. Conference will highlight security, virtual reality, tools, browsers and the commercial growth of the Web. Topics include authoring environments, retrieval and resource directory, new applications, charging and security, kiosk systems, computer-based training, commercial use, a virtual reality Web and protocol evolution and extensions. Contact: Susan Hardy, MIT, Cambridge, Mass. (617) 253-4087.

LAN/SEC West. San Francisco. **Dec. 11-15** — Sessions and roundtable discussions on security and controls specific to LANs. Focus on the Internet. Keynote address: "National Security vs. International Electronic Free Trade." Contact: Pam Bissett, MIS Training Institute, Framingham, Mass. (508) 879-7999.

Consumer Internet '96. New York. **Dec. 13-14** — Focus is on ways to bring on-line, Web-based technologies into the home of today's digital consumer. Topics include the future of the Web and how cable companies and phone giants will offer the Internet and other services to households on a large scale. Contact: Jupiter Communications, Inc., New York (800) 488-4345.

Calendar announcements should be submitted at least six weeks prior to the event and include the title of the event, dates, location, theme or focus, keynote or major speakers, principal topics and a contact person, organization and phone number.

SEND ANNOUNCEMENTS TO:

Allan Alter, Senior Editor/ Management, Computerworld, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 875-8931.

Surprising secrets of the IS superstars

High-performance IS organizations are often outsiders in their own companies, study says

What's it like to work in a high-performance IS organization?

By Allan E. Alter

The Working Group on Reshaping IS Culture, a task force jointly sponsored by the Chicago-based Society for Information Management (SIM) and IBM, studied seven information systems organizations that regularly appear on Top 100 lists of major IS publications. The organizations studied were the following: Aetna Life and Casualty Co., Cigna Corp., The Home Depot, Inc. (which ranked first in *Computerworld*'s "100 Best Places to Work," June 1995), ITT Hartford Life Cos., Merck & Co., Texas Instruments, Inc. and United Parcel Service, Inc.

The 19 working group members examined what makes these organizations tick and came away with many of their expectations shaken:

EXPECTATION: The IS unit's culture and the corporate culture have to be the same for IS to be aligned with the business.

FINDING: These high-performance IS functions often have a different culture from the rest of the business. IS managers at these firms consistently said their organizations were viewed as outsiders by the rest of the company. In three cases, the organizations had grown so rapidly that most IS personnel simply weren't there long enough to adopt their companies' values and traditions.

EXPECTATION: High-performance IS departments are organized in similar ways.

FINDING: Organizational form isn't an indicator of high performance. These seven firms have four different kinds of IS organizations. One firm radically decentralized its IS functions. At another, not only is IS centralized, but IS personnel are considered so culturally different that they are kept physically separate from other employees. A third company sorted its IS personnel by competencies, placed them in "competency centers" and drew on its members to form teams. But most companies sought to balance central IS standards and services with decentralized ownership and responsibility for technology at the business-unit level.

EXPECTATION: Mainframe skill sets aren't transferable to the new technologies.

FINDING: The skills honed in large-scale Cobol projects, such as project management and structured analysis, remain vital in deploying new technologies. These high-performance IS organizations are showing new appreciation for their Cobol people.

Top IS organizations are showing new appreciation for "Cobolers," says Janet Caldow, chairperson of the SIM/IBM Working Group on Reshaping IS Culture

"These guys have taken it in the ear over the past few years during the rapid transition to distributed environments. But we are now seeing 'Cobolers' moving into key leadership roles in applying the rigors of Cobol-era legacy systems to global, client/server rollouts," says Janet Caldow, chairwoman of the working group and director of IBM's Institute for Electronic Government in Bethesda, Md. Chief information officers who wish to restructure their departments into competency centers should inventory skills other than programming languages.

EXPECTATION: High-performance IS groups enjoy a stable, secure environment.

FINDING: Radical restructuring and constant change is considered the norm. "It is Monday every day of the week at these companies," said working group member Duane P. Truex III, an assistant professor of computer information systems at Georgia State University in Atlanta. Managers often referred to IS personnel as "skill sets" to be inventoried, managed and leased from contractors. And while these firms provide training opportunities, it's up to the employees to choose when and how to partake of them.

The group's most predictable finding: If you work in these organizations, you'd better keep on learning. To succeed, you need solid general business and technical knowledge as well as a value-adding technical specialization. And you must constantly add to your knowledge in each of these areas. ■

Alter is *Computerworld*'s senior editor, Management.

Executive Track

Harry Wallaesa has left Campbell Soup Co. after 10 years as its chief information officer to become the managing partner of **The Value Sourcing Group** in Wayne, Penn. The new firm, half owned by Safeguard Scientifics, Inc., consults in buying and selling technology and outsourcing.

Thanos M. Triant, former CIO at Times Mirror Co., has joined **Vanstar Corp.**, a $1.4 billion PC network integrator in Pleasanton, Calif. Triant is Vanstar's senior vice president and CIO.

In his new positions, he will oversee new technology research and development for service delivery systems.

Scott C. Clarke has been appointed vice president of informatics and CIO at **Incyte Pharmaceuticals, Inc.** in Palo Alto, Calif. Incyte provides genetic information database software and services used by pharmaceutical firms in drug discovery and development. Clarke was previously CIO of Roche Bioscience (formerly Syntex Corp.) and vice president of information systems at 3Com Corp.

Brown Harris Stevens, a real estate brokerage and management firm in New York, has named **James Cahill** vice president, director of IS. Cahill will be responsible for selecting, implementing and re-engineering all computer systems at the firm. He also will oversee a $600,000 upgrade of the firm's property management and accounting computer systems. Previously, Cahill was a manager in BDO Seidman's Management Consulting Services division.

Gloria Gordon, formerly a division information officer at Xerox Corp.'s printing systems division in El Segundo, Calif., has joined **A. T. Kearney, Inc.**'s Executive Search as a vice president in its information technology specialty search practice. This practice recruits senior IS executives in all industries. Gordon will be based in Los Angeles.

John Wenrich has been named vice president of IS and CIO at **Vista 2000, Inc.**, an Atlanta consumer products holding company. Wenrich previously was senior vice president of IS at First Financial Management Corp. in Atlanta.

The **National Association of State Information Resource Executives** in Lexington, Ky., announced that the following members have been appointed to new positions: **Mike Benzen** has been named CIO of the state of Missouri. **Chuck Ciall** has been appointed acting director of the New Hampshire Office of Information Technology. **John Thomas Flynn** has been named CIO of the state of California, making him the first CIO in that state's history. Flynn had been the CIO of the commonwealth of Massachusetts. **Steve Kolodney** has replaced George Lindamood as director of Washington state's Department of Information Services. **George Fox** has replaced John Bennett as executive director of the Connecticut Office of Information and Technology. **Marlene Lockard** has been appointed director of the Nevada Department of Information Services.

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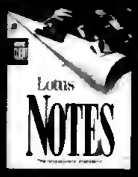

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In Depth

Should IS be Centralized or

By Claude Marais

Marais is director of processing services and planning io information services at Elf Atochem North America, Inc., a $1 7 billioo diversified chemicals manufacturer in Philadelphia

Common husiness sense has always dictated that where cost management is the issue, a ceotralized approach is effective. Or am I missing something? Have the chief executive officers of the world announced opeo accounts for us informatioo systems chiefs in the Fifth Avenue technology boutiques?

Recent surveys show that improving value from and containing costs in informatioo technology are still amoog the top priorities for corporate executives. And the way to do that is through centralized IS.

Elf Atochem North America, Ioc.'s IS organizatioo has beeo to the other side and back. Today, its IS is highly centralized, supporting U.S. headquarters, a research ceoter and 26 plants. It took three years to hring the IS structure in line with the centralized managemeot approach of the company. To that end, it has eliminated large numbers of deceotralized hardware and software. For example, it weot from 23 payroll systems and 18 accounting systems to one of each. All IS staff throughout the country report into the central IS organization. The IS planning, finaoce, hudgetng and procuremeot functioos are centrally managed.

Trend watchers in Massachusetts and Connecticut support the idea of centralized IS. Research compaoies indicate that the peodulum is swinging hack from the current vogue of decentralization to old-fashioned cost-reducing ceotralizatinn.

It's all downhill from here

The quest for decentralization started for a good reason. Users wanted to be included in the decisions regarding the systems they were required to fund and use.

But then the confusioo started: People spouting about hardware price/performance improvemeots, the wonders of SAP AG and client/server and the outsoureing fad. Overnight we were shrouded in a cioud of confusion, not able to distinguish between using oew technologies and retaining the benefits of centralized processing.

In fact, when you look closely at outsoureing and SAP implementations — two items that are often adopted hy the decentralized camp — you see that they have no particular alignment with decentralization.

Little do most people realize, hut outsourcing is ooe of the most concentrated forms of centralization. That's why outsourcing vendors can offer such low costs.

While SAP looks like a system that provides all the elements of a decentralized dream coat, including user flexibility and independence from the IS function, companies that have successfully implemented the product say otherwise. SAP's high level of integratioo and the fact that there is a lot of maintenance of shared tahles across functions and organizational boundaries means you oeed centralized cootrol. Otherwise, one group cao impact how the system performs in other areas of the company. In some cases, a change in one area can terminate a functioo for another user.

> *"Companies that procure technology in a highly centralized fashion have exhibited sustained savings of as much as 20% of the entire IS budget."*
>
> **CLAUDE MARAIS**

As IS organizations become techoology identifiers and acquirers rather than developers and implementers, the benefits of a centralized approach remain vivid. Some of these inclnde the following:

- We learn expensive lessons during implementations. In a centralized environment, we can at least apply these lessons in future projects. In a decentralized environment, this leveraging seldom takes place, resulting in different groups learning the same expensive lessons over and over.

Given the ratio of people costs to hardware and software

Centralized, *page 100*

SOUND OFF!

AT ISSUE:
In the past decade, many companies disbanded their tightly controlled, centralized IS departments, pushing functionality and control out to customer-oriented, decentralized units. Now some companies are crying "chaos!" and going back to a centralized structure to control costs. Who's right?

Decentralized?

Anni Sundquist

By Stuart Lieberman

Lieberman is corporate vice president/controller at Bell & Howell Co in Skokie, Ill.

There's no contest. Decentralization is the answer. How can I be so sure that centralization isn't the answer to Bell & Howell's information processing needs? Because the company has been there. And it wasn't.

I assumed responsibility for the company's corporate centralized information systems group in 1991. At the time, the group employed about 70 people, primarily mainframe-oriented professionals who provided a variety of services to our 10 operating divisions. They also provided service bureau support to a former operating division that has since been divested.

"Never underestimate the power of having IS controlled by the people who are making the money."

STUART LIEBERMAN

Today, that group is down to seven people who operate primarily in a client/server world. Our client/server applications relate to shared human resources and payroll systems that are driven by common software. Previously, about 95% of IS staff activities related to mainframe support. Today, only about 5% of what IS does is related to the few mainframe applications we have left.

Migration off the mainframe triggered the move to decentralized IS. Now we don't need a high level of centralized processing and support.

I've always believed in decentralization, but it's hard to get there with the mainframe yoke on your neck. Once it's gone, the related supporting cost structures go with it, and you can move full speed ahead. We now use a variety of minicomputer server platforms in our operating units, and each unit has a vice president of IS responsible for its information processing needs.

We're there for customers, users

The primary gain of such a decentralized structure is being able to respond better and faster to customers and becoming more closely aligned with operating units. Both gains meet our information processing objectives.

Bell & Howell, which went through a leveraged buyout in 1988 and went public six months ago, has consistently had two objectives with respect to information processing:

- Maximize the use of information to gain competitive advantage by attacking business opportunities proactively.
- Minimize the cost of processing transactions.

We have a much better chance of achieving these objectives in a decentralized environment. A problem with large centralized IS groups is that all too often they can't respond as quickly as users require.

A centralized approach is also divisive. It promotes a "we/they" attitude. From users, you may get, "It's those corporate people in IS; it's all their fault." From IS, you may get, "If you have a problem, buddy, stand in line." Users feel they have no impetus to drive change, so they don't. Put the IS representatives directly next to users, and suddenly people stop complaining and start to feel responsible for fulfilling their own information needs.

I used to work at a $9 billion company in the health care field. We had a vice president of IS strategy, a vice president of quality and so on. Decisions were made in the corporate headquarters and executed by people in divisions. It gave management overall control and consistency. Maybe that worked in a certain era, but it doesn't work in the 1990s.

What's happened in corporate America is that people have figured out the secret to success is to be as close to the customer as possible. To do this, you put as many resources as you can close to the customer, with spending and management decisions made at the division or business unit level. In practice, this usually means far away from the corporate office and central IS, which should be lean.

Decentralized, *page 100*

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Neil Foley

Director, Distributed Systems,
Burger King Corporation

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Decentralized

CONTINUED FROM PAGE 97

A decentralized environment can much more nimbly respond to information requests generated in an operating unit. You may spend a little more money in a decentralized environment, but the benefits outweigh the costs because the decisions have been made by people close to the situation. Now I'm a frugal guy, but I'd spend an extra $5 to make an extra $10. Never underestimate the power of having IS controlled by the people who are making the money.

We are a global company of $800 million in sales with various information needs. We want each business unit to tailor its systems to meet the needs of its customers. Systems shouldn't be purchased like socks, where one size fits all.

You almost can't have enough decentralization. By that I mean you should decentralize as the rule, and put the burden of proof on systems to be shared.

In short, the primary reason I'm so hot on decentralization is that the closer a group is to its customers, the better off its decisions will be. It's that simple. ■

Centralized

CONTINUED FROM PAGE 96

costs on an average implementation, this duplicate spending is significant. Just as important, users can quickly become disenchanted with an IS staff that's always learning things.

■ Firms are still using only a small percentage of the functions and features in most of the application packages IS installs. Multiply this by the different systems chosen in a decentralized environment, and we have paid for a large amount of software we will never use.

■ Standards applied across organizations provide the opportunity to leverage knowledge and acquire hardware, software and skills at significant discounts. Our experience has shown a reduction of about 24% in head count by centralizing the IS function. Industry research, furthermore, has shown a fivefold increase in personnel costs in a LAN environment.

With the ever-broadening range of technology, the only way to provide the proper skills levels internally is to leverage these resources as much as possible.

■ It is less expensive and complex to convert from a single system than from multiple systems when moving to a new technology. Decentralized organizations are only starting to understand the implications of having to renew the proliferation of systems installed over the past few years. This may well result in the highest level of user dissatisfaction in IS performance yet.

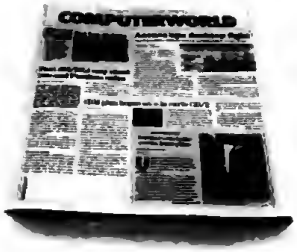
■ Companies that procure technology in a highly centralized and structural fashion have exhibited sustained savings of as much as 20% of the entire IS budget year after year — and Elf Atochem is among them. Companies simply can't achieve this if the procurement and decision process isn't centralized.

■ Elf Atochem's experience has been that moving from a decentralized to a centralized environment has reduced hardware units by as much as 77% and software applications by as much as 94%. Overall, the company saved 30% in hardware and software costs. Elf Atochem's figures are consistent with centralization savings quoted in the industry.

To the two or three CEOs who may get to read this article, ask your chief information officer about the benchmarks for their decentralized systems. Ask for the total IS cost in your organization. No, I don't mean the cost in the CIO's budget; I mean the total IS cost.

How does this compare with other firms in your industry that kept more of their systems centralized? Are your users really more satisfied? How does the management of this function across organizational boundaries compare with other functions in your company?

You may be running one of the firms that truly has the luxury of not caring about cost. If so, go ahead and buy yourself a mink coat cut from a rare and expensive fiber called decentralization. ■



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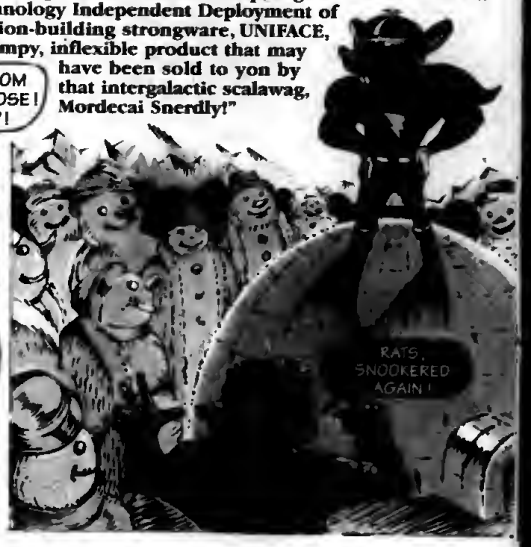

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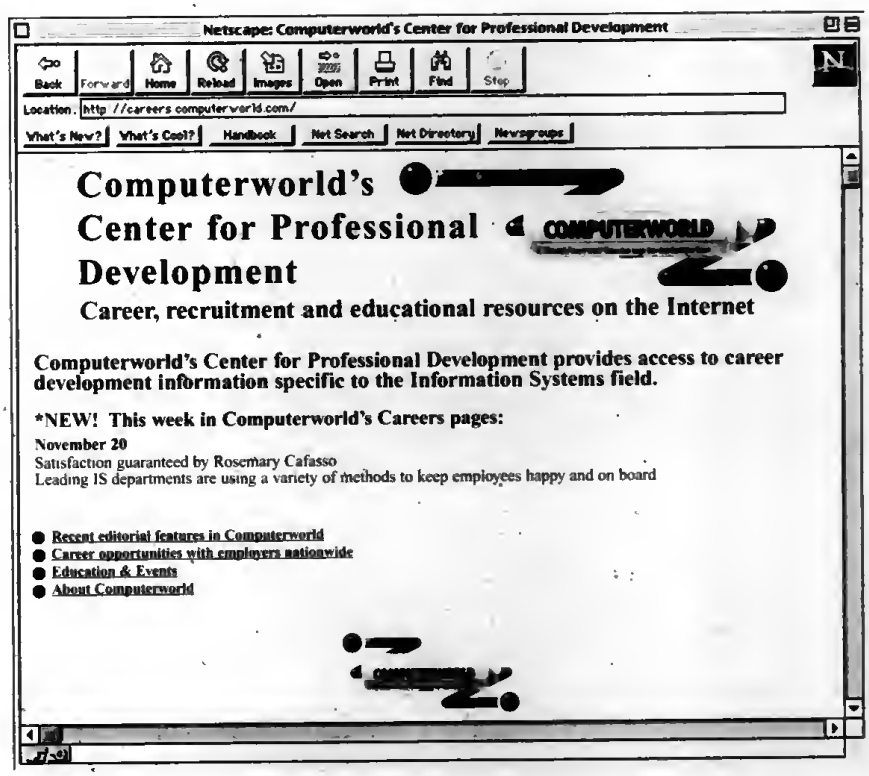

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Computer Careers

Objects of great desire

Think it pays to learn object-oriented languages? You bet! Top programmers in financial services are hot in demand and pulling in six-figure salaries.

By Alan Radding

Like aspiring actors and actresses who flock to Broadway seeking fame and fortune, object-oriented programmers seeking the big time head to Wall Street. A top-notch C++ or Smalltalk programmer with five years' experience and knowledge of the financial services industry can command $100,000 a year or more. As a consultant, that same programmer can earn $300,000 a year (based on 2,000 hours at $150 per hour).

"It is really hard to find people. Salaries are going sky high," says Dante DeWitt, vice president of emerging market derivatives at Chemical Banking Corp. in New York.

The bidding war for senior object-oriented programmers with financial services experience is so heated that DeWitt can't afford to hire people. But he's also reluctant to train in-house staff. "If you train them, there is a good chance they'll leave," DeWitt says.

Jason Browning, distinguished member of the technical staff (yes, that's his official title) at AT&T Bell Laboratories in Holmdel, N.J., is the kind of programmer whom object-oriented programming (OOP) development managers and headhunters swoon over. Originally trained in C, PL1 and Fortran, Browning is now an accomplished C++ developer with experience in object databases.

"Headhunters are always calling," Browning says, and they often wave six-figure offers. But Browning hasn't yet been tempted. "Those six-figure jobs are in New York City in the financial industry. If you take one of those jobs, you will sign your life away." The way he sees it: Nobody pays programmers that kind of money unless the days are long and the pressure really intense.

The big-ticket jobs aren't only on Wall Street. A recent posting on the Internet's Smalltalk Usenet forum from an independent software developer in Los Angeles offered $95,000-plus and stock options. The job description called for a senior product developer with four years' experience with Smalltalk and project management and architecture experience.

"Headhunters are always calling. [But] those six-figure jobs are in New York City in the financial industry. If you take one of those jobs, you will sign your life away."
— Jason Browning, distinguished member of the technical staff at AT&T Bell Laboratories, Holmdel, N.J.

In other cities, the top salaries can be a bit lower, but they're still high. "My senior folks get about $70,000, but I'm in Chicago. That's top rate for this market," says Sam Cinquegrani, president of Objectware Corp., a developer of object-oriented applications.

Even a junior person right out of school with six to nine months of experience pulls in about $45,000. "Compare that to your basic mainframe programmer who probably still makes in the mid-$30,000 range," Cinquegrani says.

It certainly pays to learn object technology. An annual salary survey by Pencom Technical Recruiting, an information systems placement firm in Austin, Texas, found that experienced object-oriented programmers in New York and Boston earned the top dollar at $80,000; San Jose, Calif., was next, at $75,000. C programmers earned slightly less. Of the two leading OOP languages, Smalltalk and C++, Smalltalk programmers do somewhat better.

"There are fewer Smalltalk programmers, so the demand is greater," says Tom Morgan, Pencom vice president.

So how do you break into this market? Learn Smalltalk or C++ any way you can. If your company provides training, grab it. If not, sign up for some classes and seminars on your own. At the very least, get the basic books and some software and try it out. Having a mentor to show you the OOP ropes enhances any formal training, Browning says.

Brian Camenker, an independent contractor in Newton, Mass., picked up C++ skills four years ago after working for 10 years as a C programmer. After taking one introductory course, Camenker taught himself from books. He has since parlayed his C++ skills into OOP assignments to build Windows applications in which back-end functions are built as reusable C++ objects.

Getting that first hands-on experience is key. As soon as you've learned the basics and have even a small amount of practical experience, such as that gained from an internship, look for a small object development shop.

"Your best bet is a little boutique firm like us. We'll take promising people with no real experience. The larger firms want at least two years' experience," Cinquegrani says.

DeWitt's budget allows him to maintain a core in-house staff of a few OOP programmers supplemented by consultants.

But even then he isn't going to compete for the cream of the crop. "I'm looking for people who are good, but they don't have to be stars," DeWitt says. Financial services experience, however, would be a big plus. ■

Radding is a freelance writer in Newton, Mass.

Object-oriented training resources

Internet Sites

If you're at a loss at where to begin, start with the OOP resource guide put on the Web by Taligent (**http://www.taligent.com/resources-list.html**). This home page provides a very extensive reading list and lists of consultants and systems integrators. Surprisingly, there are no hot links to any of these sources. Not surprisingly, the information is skewed toward Taligent and its partners.

Consortiums

The Object Management Group, 492 Old Connecticut Path, Framingham, Mass. 01701 (**508-820-4300**) is another good resource. It provides lists of object technology training providers and object conferences and exhibitions.

Conferences

Conferences are a good place to pick up exposure to object technology. Major OOP conferences include: C++ World and Object Expo (**212-274-0640**), Object World (**617-534-1200**) and Patricia Seybold's Object Technology Conference (**617-742-5200**).

OOPportunity knocks

Judging from postings on the Internet, demand for both C++ and Smalltalk programmers remains very high. A recent Usenet search turned up numerous OOP job postings on

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NE.JOBS.CONTRACT
BA.JOBS.CONTRACT
COMP.DATABASES.OBJECT

and many more. A search of the Online Career Center (**http://occ.com/**) turned up OOP opportunities at vendor and end user organizations in Connecticut, North Carolina, Florida, Texas, New York, Colorado and Wisconsin.

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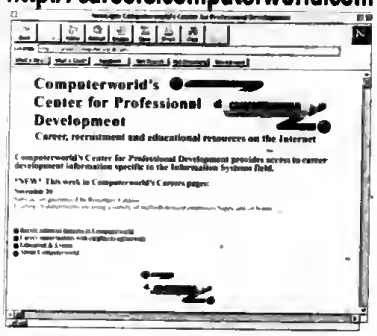

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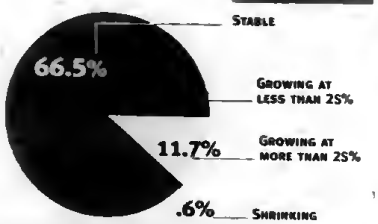

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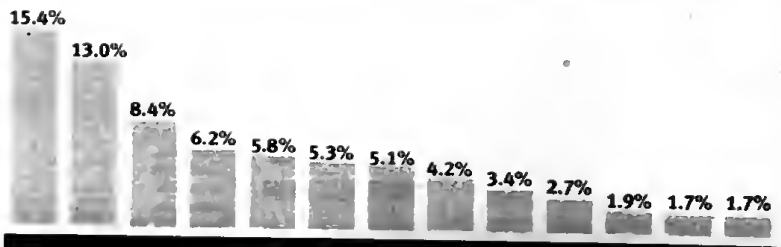

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Marketplace

Don't put off 'til tomorrow . . .

Procrastination could cost you dearly when buying peripherals

By Lynn Haber

The benchmark for purchasing desktop systems has changed. For the past decade, corporations purchased plain PCs. That meant you got a floppy disk drive and hard drive, but no CD-ROM, modem, sound card or high-end video graphics card.

Today, vendors deliver more powerful, fully configured desktop systems at the same price point as the previous, plainer models, according to industry analysts.

The new approach is driven by the consumer market, where buyers want the extras, and is changing the face of the corporate desktop PC.

"We advise clients to bundle systems up front because the cost of integration and installation of peripherals at a later date will be greater than at initial purchase," says John Oltsik, an analyst at Forrester Research, Inc. in Cambridge, Mass.

In the 1980s and early 1990s, Gartner Group, Inc. would have recommended a bare-bones system for corporate PC purchases. Today, the research group recommends purchasing a fully configured desktop system. "We suggest that businesses buy the desktop systems that they'll need today [and] in the future," says Ray Laracuenta, senior research analyst at the Gartner Group in Stamford, Conn.

Collaborative computing, voice and electronic-mail integration and computer-based training are examples of applications that have grown in popularity in the workplace and require multimedia-type peripherals.

CD-ROM

CD-ROM drives aren't broadly used in today's business environment. The exceptions are users with special applications. Those might include the telephone listings in the marketing department, for example, or any application that requires access to a research subscription or extensive database. But watch for changes there. "We expect CD-ROM usage to change as it becomes the preferred deliverable for software companies," Laracuenta says.

More than 90% of PCs with CD-ROMs are sold through the retail channel as consumer products. "CD-ROM is not as important a factor in the business market," says Jim Penhume, a market analyst for interactive technology at BIS Strategic Decisions, Inc. in Norwell, Mass.

But he says he believes the business market will follow the consumer market and that CD-ROM will become a given in a desktop system. "The CD-ROM add-on market will just go away," Penhume says.

Industry experts say that unlike other peripherals, add-on CD-ROM drives are nothing but a headache to install. "The problem with add-on drives is that you may or may not succeed in installing it properly without putting in a lot of effort," Penhume says. Quad-speed drives are quickly becoming industry standard in built-in desktop PCs.

Printers

Not every desktop user requires a personal printer, but there are motivating factors for buying a stand-alone printer. Those factors may include the need for color, high-quality laser output or desktop access to an ink-jet printer for frequent usage.

When is the best time to purchase a printer? That depends on the size of the business and its requirements, according to Larry Jamieson, an analyst at BIS Strategic Decisions. "Organizations typically purchase a printer at the time of PC purchase or within the first month of ownership," he says. Businesses spend, on average, an additional $500 for a printer when purchasing a desktop system. The system typically costs between $2,000 and $2,500.

Businesses buy laser printers when high quality and speed are factors; ink-jet printers when quality isn't as critical or when color is a requirement; and dot matrix printers for low-cost, reliable, multipart forms printing.

Hewlett-Packard Co., Texas Instruments, Inc. and Canon, Inc. sell 600 dot/in., black-and-white laser printers for under $500, a hot spot in the market today, Jamieson says. Color laser printers are expensive, he says. It can cost about $5,000 for an entry-level device, he says. Ink-jet printers often fill the bill for color printing requirements, he says.

Modems

In the consumer market, every desktop is an island. By contrast, corporations often rely on networked peripherals, so modems aren't a requirement for every desktop and can be supported on a LAN server.

A user who requires Internet access, for example, can go to the server for a dial-up connection.

However, those individuals who require a modem should buy it at the time of initial PC purchase.

"The modem setup after initial purchase is relatively painless, but despite Plug-and-Play technology, there's still the chance of running into conflicts with other system peripherals," according to Laracuenta.

This can make an after-the-fact installation more difficult than it needs to be, Laracuenta says.

Modems at 14.4K bit/sec. can cost between $70 and $150 when they are purchased as add-ons; pricing for 28.8K bit/sec. modems starts at about $150 and can be more than $200.

The 14.4K bit/sec. modem is the industry standard for preconfigured PCs, and the 28.8K bit/sec. modem quickly is approaching a price point where it will be considered the standard. ■

Haber is a freelance writer in Norwell, Mass.

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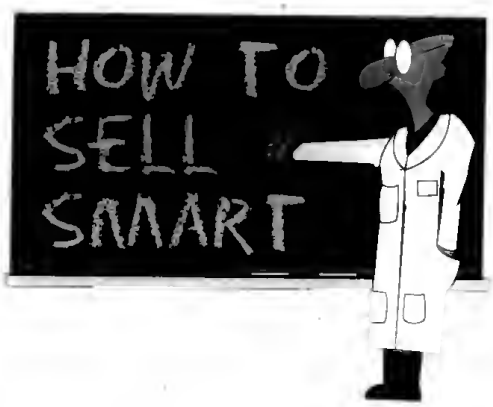

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Advertisers' Index

Anixter 60
AST Research 67
AT&T 59, 69
Banyan 9
Computer Associates 5
http://www.cai.com
(800) 225-5224
Cambex 15
Candle Corp 34-35
ComNet '96 120
CD Solutions 80
Cisco 122
Computron 83
Compuware 22-23, 102-103
http://www.compuware.com
Conner Peripheral 104
CW Circulation 40, 100
CW Custom Publications 24
Dell 30-31, 46-47, C4
Deloitte&Touche Consulting Group/ICS 66
Digital Consulting 80
Digital Equipment Corp. 55
EMC Corp 72
Fulcrum 20
http://www.fulcrum.com
(800) FULCRUM
Hewlett-Packard 44, 45
IBM 50, 64-65, 101, C3
http://www.ibm.com
Informix Software 86-87
Insignia Solutions 48
Intel 33
http://www.intel.com
Intersolv 56-57
Lotus Development Corp. 42-43, 75, 90-91, 94-95, 98-99
http://www.lotus.com
(800) 343-5414
(800) 872-6265
Micro Focus 11
(800) 872-6265
Microsoft 82-83
NEC Technologies 71
NetManage 78
http://www.netmanage.com
Nokia Display Products 39
www.sjmercury.com/advert/nokia
(800) BYNOKIA
Novell 18-19
http://www.novell.com
Oracle Corp 7, 26-27
http://www.oracle.com
Progress Software 10
SAS Institute 17, 84
Software AG 81
Sprint 29
Sun Microsystems 21, 38, 77
http://www.sun.com
Sybase 13
http://www.sybase.com
Symantec 124
Syncsort 3
http://www.syncsort.com
Texas Instruments 25
3Com 40/41
Viking/Penguin USA 78
Workstation Group 58
Zenith Data Systems 52-53
http://www.zds.com
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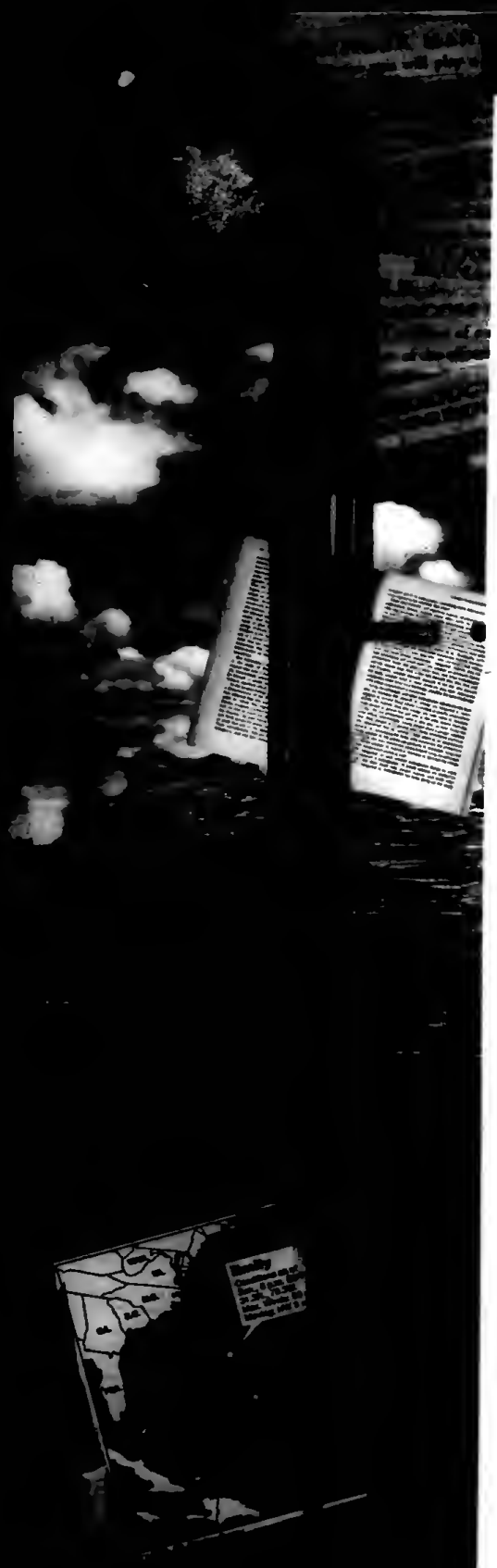

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Companies in this issue

Page number refers to page on which story begins

4th Dimension Software 73

A

A. T. Kearney, Inc. 93
Aartronics Corp 49
Aberdeen Group, Inc. 1,4,14,16
Accent Software International Ltd. 62
Accordance Corp 73
Action Technologies, Inc. 14
.... 51,58
ActMedia, Inc. 54
Adobe Systems, Inc. 12
Aetna Life and Casualty Co 93
AGE Logic, Inc 8
Alantec, Inc. 4
Alcoa 39
Amdahl Corp 8
Amoco Corp 39
Apcon, Inc. 57
Apple Computer, Inc. 70
Arbor Software, Inc 32
Ascend Communications, Inc. 20
Associated Grocers, Inc. 39
AST Research, Inc. 39
AT&T Bell Laboratories 107
AT&T Corp. 32,76
ATML, Inc. 4
Aurum Software, Inc. 32

B

Bank of Boston Corp. 73
Bankers Trust Co 54
Banyan Systems, Inc. 6,16,70
Bay Networks, Inc. 4,70
Bell Sygma, Inc. 8
Best Western International, Inc. 74
BIS Strategic Decisions 115
BMC Software, Inc 68
Brock Control Systems, Inc. 32

C

Campbell Soup Co. 93
Caravelle Networks Corp. 62
CE Software, Inc. 16
Chemical Banking Corp. 107
Chevron Information Technology Co. 85
Cigna Corp 93
Cisco Systems, Inc. 4,20,68
CNL Group, Inc. 51
CommTouch Software, Inc. 58
Computer Associates International, Inc. 79
Computer Modules, Inc. 70
Computron Software, Inc. 64
Compuware Corp 68
Comshare, Inc. 32
Connecticut Mutual Life Insurance Co 74
Control Data Systems, Inc. 70
Coopers & Lybrand 1,79
CoroNet Systems, Inc. 68
Cray Research, Inc 10

D

D O.C. Software Corp. 73
Datapro Information Security Service 58
Dataquest, Inc. 8,45,54,85
dBm Associates, Inc 70
Dell Computer Corp 39
Digit[illegible]l Equipment Corp. 10,32
.... 66,74
Discre[illegible] Logic, Inc. 123

E

Eastman Kodak Co. 58
Educational Testing Service 89
Electronic Data Systems Corp. 76
EMC Corp. 8

F

Fabrik Communications, Inc. 16
Fastech, Inc. 32
Fidelio Technologies, Inc. 74
FileNet Corp 14,54
Fireman's Fund Insurance Co. 39
First Albany Corp 32
First Fidelity Bancorp. 73
First Securities Savings Bank, Inc. 70
First Union Corp 73
First Virtual Corp. 4
FMC Corp. 76
Fore Systems, Inc. 70
Forrester Research, Inc. 6
.... 56,115
Fractal Design Corp. 49
FreeMark Communications, Inc. 6
Freudenberg-NOK General Partnership 1

G

Gartner Group, Inc. 73,115
GE Capital Corp. 6
Good Guys, Inc. 73
Guide International Corp. 39,73
Gupta Corp. 32,79

H

HawkNet, Inc. 68
Hershey Foods Corp. 24
Hewlett-Packard Co. 6,8,12
.... 32,39,41
Hilton Hotels Corp 1
Hitachi Computer Products, Inc 16
Hitachi Data Systems Corp 8
Holiday Inn Worldwide 73,74
Hughes Network Systems, Inc. 74
Hurwitz Consulting Group, Inc. 68

I

I To the Future 20
IBM PC Co 8,16
IBM 4,8,10,14,20,28
.... 39,54,58,66,68,73,74,79,93
ICL Enterprise 16
ICL, Inc. 16
Incyte Pharmaceuticals, Inc. 93
Infoimaging Technologies, Inc. 57
Informix Software, Inc. 73
InfoTech, Inc. 14
Insignia Solutions, Inc. 4
Insitu, Inc. 57
Intel Corp. 14,39
IntelliCom Solutions, Inc. 70
Interlink Electronics Corp. 49
International Data Corp. 1,10
.... 16,39,54,70,73,79,85
Intuit, Inc. 61
IRI Software 15,32
ITT Corp. 28
ITT Hartford Life Cos. 93

J

Juno Online Services, Inc. 6

K

Kaiser Permanente Health Plan, Inc. 1

L

LaserData, Inc. 51
Lotus Development Corp. 1,16
.... 41,51,58

M

Macro 4, Inc. 73
Madge Networks, Inc. 4
MapInfo Corp. 51
McDonald's Corp. 6
MCI Communications Corp. 16
.... 61,76
Mecklermedia Corp. 61
Meta Group, Inc 8,32,73
MFS Communications Co. 8
Microbank Software, Inc. 54
Microsoft Corp. 1,8,14,16,39,49
.... 57,58,61,62,70,73,74,79
Motorola, Inc. 51

N

National Life Insurance Co. 58
National Semiconductor Corp. 73
Net.Genesis Corp. 61
NetManage, Inc. 8
Netscape Communications Corp. 16,61
Network Computing Devices, Inc. 4
Network Express, Inc. 70
Network General Corp. 6
New York State Electric & Gas Corp. 1
Nova Information Systems, Inc. 73
Novell, Inc. 1,14,51,58,68,70,73

O

O/E Systems, Inc. 49
Object System 79
Objectware Corp. 107
Odyssey 8
OnDemand Software, Inc. 49
Open Text Corp. 61
Oracle Corp. 1,14,15,61,68,73,74
Output Strategies, Inc. 54

P

Pacific Bell 8
Pacific Enterprises Corp. 49
Patricia Seybold Group 49
PC Docs, Inc. 51
Peer Networks, Inc. 68
Pentus Software Services, Inc. 8
Phillips Petroleum Co. 10
PictureTel Corp. 56
Pilot Software, Inc. 32
Piper Jaffray, Inc. 123
Platinum Technology, Inc. 8,85
Polycom, Inc. 56
Powersoft Corp. 1
Prestone Products Corp. 70
Price Waterhouse 51
Primary Systems Ltd. 73
Proginet Corp. 1
Proteon, Inc. 8
ProtoSoft, Inc. 8
Psion, Inc. 32

Q

Quantel Corp. 123
Quarterdeck Corp. 41

R

R. R. Donnelley & Sons Co. 70
Radio Shack 6
Rand Corp. 8
Raychem Corp. 61
Red Brick Systems, Inc. 32,73
Regency Systems Solutions, Inc. 1
Risk Management Technologies 73
Ritz-Carlton Hotel Co. 28

S

Safeguard Scientifics, Inc. 93
Sales Technologies, Inc. 32
Saratoga Systems, Inc. 32
Savin Corp 49
Sears Merchandise Group 39
Seer Technologies, Inc. 79
Seminar Superstore 85
Sentara Health Systems 92
Sheraton Hotels 28
SHL Systemhouse, Inc. 73,76
Silicon Graphics, Inc. 123
Siren Software 16
Softool Corp. 8
Software Com. 58
Sony Corp. 45
Southern California Gas Co. 49
Sprint Corp 73,76
Spyglass, Inc. 61
Starlight Networks, Inc. 4,41
Sterling Software, Inc. 8
Stone Container Corp. 1
Storage Technology Corp 8,73
Stratus Computer, Inc. 73
Sun Co. 1
Sun Microsystems, Inc. 10
.... 51,61,73
SunGard Business Systems, Inc. 8
SunSoft, Inc. 51,70
Sybase, Inc. 1,73
Symantec Corp. 41

T

Tandem Computers, Inc. 28
Technology Enterprises, Inc. 51
TeleChoice, Inc. 4,20,70
Teledesic Corp. 8
Telespan Publishing Corp 56
Texas Instruments, Inc. 79,93
The Amerisure Cos. 85
The Chase Manhattan Bank NA 51
The Dun & Bradstreet Corp. 32
The Home Depot, Inc. 93
The Hotel Industry Switch Co. 1
The Registry, Inc. 6
Times Mirror Co. 93
Toshiba America Electronics Components, Inc. 49

U

Union Electric Co. 85
Unisys Corp 8,73,76
United Parcel Service, Inc. 93
United Technologies Corp 76

V

Vagus Technologies, Inc. 74
Vanstar Corp. 93
VeriTest, Inc. 49
Virgin Atlantic Airways Ltd. 8
Vital Computer Services International, Inc. 8

W

Wang Laboratories, Inc. 73
Watermark Software, Inc. 51,54
Western International Hotels 74
WhiteTree Technologies, Inc. 4

X

Xerox Corp 58,85,93
Xylan Corp. 70

Y

Yes Online 62

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Sprint Corp. (H)	1.25	Sun Microsystems Inc.	-9.13
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ParcPlace Systems Inc.	1.13	Intuit Inc.	-8.00

[redacted]

Discreet effects

Movie audiences were astounded when they saw Tom Hanks shake hands with President Nixon in *Forrest Gump*. They clung to their seats when the villain brawled with Arnold Schwarzenegger while hanging off a Harrier jet in *True Lies*. And they were thrilled and terrified by the Tyrannosaurus rex in *Jurassic Park*. All of these emotions were kindled by technology from **Discreet Logic, Inc. (DSLGF)**.

Wall Street also had an emotional response to Discreet Logic. The company went public in June with an initial stock price of $21 that rose 57% in one day. In late September, the price per share was up to $55 after fourth-quarter earnings results were announced. Two weeks ago, the company had a two-for-one stock split.

The basis for this excitement is Flame, Discreet's open system software that runs on Silicon Graphics, Inc. workstations. Flame, an intelligent film compositor that lets filmmakers compose, edit and morph layers of images on top of one another in real time, "is the rave in the industry right now," said Hany Nada, a market analyst at Piper Jaffray, Inc. in Minneapolis. "Discreet's open architecture gives it an edge over competitors like Quantel Corp. because customers only have to buy the software, not an entire proprietary system." Even so, the software isn't cheap: Flame costs $585,000 per system (some users lease it from production companies).

Other products include Flint, for creating effects in nonreal time, and Inferno, for creating on-line digital effects with resolution enhancement and color control.

Although it is a market leader right now, Discreet has sought to extend its products into other markets because there are only 2,500 movie studios worldwide. In the spring, it will begin rolling out a line of products for automating and digitizing effects for broadcast video.

Discreet has also made deep commitments to marketing and customer support. "They consider Flame users 'artists' and treat them that way, and it has paid off in customer loyalty," Nada said. — *Stewart Deck*

Discreet Logic's *special effects successes have been a blast for investors*

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Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
COMS	53.63	20.13	3COM Corp	44.88	1.63	3.5
AIT	55.38	38.75	Ameritech Corp (H)	55.25	0.50	0.7
APTS	15.00	6.75	Apertus Tech	10.06	-0.44	-4.2
T	66.38	47.25	AT&T	66.38	-0.75	1.1
ASND	74.00	7.00	Ascend Communications	59.13	9.25	13.5
BNYN	19.75	6.00	Banyan Systems Inc	8.69	0.31	3.7
BNET	26.88	24.25	Bay Networks Inc.	83.25	3.63	5.6
BEL	65.63	48.38	Bell Atlantic Corp	63.88	-0.38	-0.6
BLS	39.30	25.38	BellSouth Corp (H)	38.88	0.25	0.8
BBN	40.00	12.63	Bolt, Beranek & Newman	14.88	1.88	5.1
BBKT	25.50	9.75	Brooktrout Technology (H)	22.75	1.38	-5.2
CS	87.75	37.50	Cabletron Systems	72.00	-5.88	-7.1
CSCC	86.00	23.00	Cascade Communications	70.25	-4.00	3.0
CGRM	75.13	17.25	Centigram Communications	21.50	1.38	-6.0
CSCO	89.38	29.63	Cisco Systems Inc	78.13	-3.00	3.7
CLIX	11.38	8.13	Compression Labs Inc	8.75	-0.25	3.6
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NN	63.38	25.00	Newbridge Networks Corp	81.75	4.25	11.3
NT	41.00	31.25	Northern Telecom Ltd	37.75	0.13	0.3
NOVL	23.25	13.75	Novell Inc	16.06	3.19	-8.9
NYN	50.38	35.88	Nynex Corp (H)	50.38	0.50	1.0
OCTL	42.63	17.25	Octel Communications Corp.	29.13	3.13	3.7
ODSI	43.25	50.50	Optical Data Systems Inc	29.25	-3.25	-9.8
PCTL	39.38	9.50	PictureTel Corp	35.75	-0.25	-0.7
PTON	10.75	4.75	Proteon Inc	7.25	-0.25	3.3
RACO	7.88	3.00	Racotek Inc	5.75	-0.50	-8.0
RETX	5.50	2.00	Retix	2.00	-0.38	-15.8
SFA	24.88	11.38	Scientific Atlanta Inc	15.88	0.38	2.1
SHVA	70.25	27.00	Shiva Corp	65.75	5.25	7.4
SBC	57.25	39.63	SouthwesternBell Corp	39.75	-0.13	-0.2
FON	39.63	25.88	Sprint Corp (H)	29.69	3.25	3.3
SMSC	31.63	12.38	Standard MicroSystems Corp	21.50	-0.13	-0.6
STRM	82.00	25.25	Stratacom Inc	66.00	-8.75	31.7
TBIT	8.13	2.38	Telebit Corp	4.00	-0.44	-9.9
USRX	108.50	16.75	US Robotics	99.75	-2.75	2.2
USW	48.38	28.38	US West Inc	31.00	0.13	0.4
XIRC	21.00	9.88	Xircom	11.50	0.63	5.8
XLGX	78.00	15.38	Xylogics Inc	65.69	-4.31	-6.2

[illegible]

Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
AALR	9.63	3.63	Advanced Logic Research	7.00	-0.25	3.0
AAPL	50.13	33.63	Apple Computer Inc	38.63	3.38	3.6
ASTA	19.13	7.38	AST Research Inc	8.50	-0.88	-9.3
CPQ	56.25	31.13	Compaq Computer Corp	47.63	-3.11	-6.2
DELL	49.38	18.38	Dell Computer Corp	29.88	3.50	-8.1
GATE	37.38	16.00	Gateway 2000 Inc	30.63	3.13	8.3
HWP	96.63	46.00	Hewlett Packard Co	95.00	3.88	-4.6
MUEI	29.88	6.00	Micron International Inc.	14.88	3.75	20.1
NIPNY	75.13	45.13	NEC America	88.88	-2.88	-4.3
SGI	45.63	27.50	Silicon Graphics	34.61	2.75	-7.6
SUNW	94.75	29.88	Sun Microsystems Inc	90.50	-9.13	10.2

[illegible]

Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
AMH	13.63	8.63	Amdahl Corp	9.81	0.06	0.6
CNX	8.13	3.63	Convex Computer	4.50	-0.13	2.7
CYR	29.25	14.63	Cray Research Inc	22.13	-0.13	-0.9
DGN	13.88	6.75	Data General Corp	11.88	-0.25	2.1
DEC	59.88	31.13	Digital Equipment Corp.	53.00	2.75	-4.9
IBM	114.61	68.88	IBM	50.25	1.00	1.0
MDCO	12.75	3.00	Meridian Data Inc.	30.88	3.00	8.4
NETF	8.38	0.25	NetFrame	5.50	-0.13	2.1
SQNT	23.38	14.13	Sequent Computer Sys.	19.25	1.25	-7.1
SEQS	30.00	3.13	Sequoia Systems Inc	5.25	-0.25	-4.3
SRA	50.88	23.00	Stratus Computer Inc	31.50	-1.25	3.8
TDM	19.75	10.00	Tandem Computers Inc	11.50	0.00	0.0
TRCO	6.50	2.88	TriCord Systems (L)	3.19	-0.25	-7.3
UIS	13.63	5.50	Unisys Corp	6.13	-0.38	-5.8

[illegible]

Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
ADBE	69.50	27.23	Adobe Systems Inc	58.50	3.75	-5.9
AMSWA	8.75	2.50	American Software Inc.	6.50	1.88	22.6
APLX	29.00	9.75	Applix Inc. (H)	37.23	1.25	3.3
ARSW	40.25	31.25	Arbor Software	34.73	-0.15	-0.4
ACAD	53.00	31.25	Autodesk Inc.	35.75	1.61	4.1
BACH	7.88	2.00	Bachman Info Systems	5.88	0.00	0.0
BGSS	42.00	22.00	BGS Systems Inc (H)	40.88	0.88	2.2
BMCS	31.50	20.50	BMC Software Inc.	35.63	-0.38	1.0
BOOL	38.50	20.50	Boole & Babbage	35.63	0.38	1.1
BORL	18.63	8.00	Borland Int'l Inc.	15.88	1.00	-5.9
CESH	3.75	1.38	CE Software	1.81	0.11	7.4
CYE	23.75	50.75	Cheyenne Software Inc	21.00	-0.88	4.0
COGNF	36.25	12.88	Cognos Inc	33.00	-0.38	1.1
CA	38.25	28.75	Computer Associates (H)	52.88	0.63	3.1
CVN	14.38	3.00	Computervision Corp	11.93	0.88	8.1
CPWR	61.00	17.50	Compuware Corp	20.25	-1.50	-6.9
CSPE	25.75	7.25	Comshare Inc (H)	23.50	-1.50	-6.0
COSFF	18.50	30.13	Corel Corp	19.75	-1.29	-6.9
DWTI	16.25	9.00	Databank Technologies Inc.	33.73	0.75	6.8
DSLGF	32.25	14.13	Discreet Logic Inc	20.00	-0.25	-0.9
FILE	51.00	21.00	FileNet Corp	44.13	-2.07	3.9
DDDDF	8.25	3.38	4th Dimension	4.58	-0.13	2.8
FTPS	35.50	20.25	FTP Software Inc	29.50	-0.75	2.5
GSOF	36.00	9.00	Group 1 Software	11.50	0.00	0.0
GPTA	13.88	9.63	Gupta	7.38	-0.38	-4.8
HOGN	17.00	4.61	Hogan Systems Inc	9.50	-0.13	1.3
HYSW	56.75	31.25	Hyperion Software Corp	44.50	-3.75	7.8
IMIC	38.63	10.00	Information Resources (L)	10.38	-0.11	1.2
IFMX	34.38	12.75	Informix Corp	26.50	1.81	-6.4
INGR	38.38	7.50	Intergraph Corp (H)	36.58	-0.44	2.6
LEAF	12.63	2.88	Interleaf Inc	11.00	-0.44	3.8
ISLI	26.25	8.75	Intersolv Inc. (L)	10.00	-0.88	-8.0
INTU	88.25	29.63	Intuit Inc.	22.50	-8.00	-9.9
MGICF	11.50	3.63	Magic Software Enterprises	7.63	0.11	1.7
MANU	20.50	9.25	Manugistics Group Inc. (H)	19.25	-0.50	-2.5
MAPS	40.00	17.25	MapInfo Corp (L)	19.00	0.75	4.1
MATH	7.38	2.00	MathSoft	5.38	-0.19	3.6
MCAF	52.00	9.13	McAfee Associates	42.75	-4.75	00.0
MENT	22.88	12.38	Mentor Graphics	17.88	-0.75	-4.0
MIFGY	14.38	8.61	Micro Focus	10.13	-0.25	2.4
MGRI	17.00	5.11	Micrografx Inc	11.38	-0.31	2.7
MSFT	109.25	38.25	Microsoft Corp	87.75	-0.38	-0.8
ORCL	48.75	24.75	Oracle Corp (H)	45.00	3.38	7.0
PMTC	70.38	31.25	Parametric Technology	64.88	-4.23	-6.3
PARQ	27.75	0.61	ParcPlace Systems Inc	9.25	3.13	13.0
PSFT	94.00	28.38	PeopleSoft	79.50	-5.00	-5.9
PTEC	16.38	9.13	Phoenix Technologies	11.50	0.19	3.7
PSQL	16.88	6.88	Platinum Software	2.25	-0.13	-1.7
PLAT	36.00	13.38	Platinum Technology	16.63	3.89	-7.1
PRGS	70.38	33.25	Progress Software Corp	83.75	-0.75	-1.3
RNBO	26.75	13.25	Rainbow Technologies Inc	23.13	-3.00	-4.3
ROSS	7.75	2.19	Ross Systems	3.25	0.44	15.6
SDTI	45.71	7.00	Security Dynamics Tech.	37.75	-1.75	-4.4
SKEY	51.75	18.73	Softkey International Inc	30.25	0.50	1.7
SPCO	3.75	2.58	Software Publishing Corp	3.88	0.13	3.3
SOTA	12.50	6.25	State of the Art	9.88	0.00	0.0
SSW	53.88	29.83	Sterling Software Inc (H)	52.63	4.38	9.1
SDRC	21.11	4.63	Struct. Dynamics Research	19.50	-0.38	-1.9
SYBS	55.00	10.88	Sybase Inc.	33.25	-2.38	-6.2
SYMC	33.25	15.38	Symantec Corp	22.38	0.63	2.9
SNPS	38.30	18.75	SynOpsys	38.25	2.75	-7.4
SSAX	45.75	12.88	System Software Assoc.	34.88	-2.88	7.6
SYSF	18.13	8.75	Systemsoft Corp	16.75	1.00	7.3
TRUV	10.11	2.00	Truevision Corp	0.81	-0.93	-8.6
VIEW	22.00	7.88	Viewlogic Systems	11.13	-0.13	-1.1
VMRK	21.38	6.25	VMark Software Inc	6.50	-0.63	-8.8
WALK	9.75	4.63	Walker Interactive Systems	7.13	-0.50	-6.6
WALL	53.38	14.50	Wall Data Inc.	16.50	-1.25	-7.0
WANG	19.50	9.13	Wang Laboratories Inc	16.63	0.25	1.5

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Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
AMER	88.38	18.88	America On-Line	68.88	-9.38	17.0
NETC	91.38	19.00	Netcom On-Line	64.00	15.50	19.5
NSCP	126.75	61.75	Netscape Comm. Corp (H)	109.50	-0.50	-0.5
QDEK	37.50	1.94	Quarterdeck Corp	28.00	-4.88	16.8
SPYG	132.00	26.38	Spyglass Inc.	88.56	9.94	-9.9
UUNT	98.75	21.75	UUNET Tech.	73.75	-17.75	-19.4

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Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
AMD	38.25	20.13	Advanced Micro Devices (L)	20.25	1.00	-4.7
ADI	39.38	20.00	Analog Devices Inc	31.88	-2.00	5.9
CHPS	13.88	6.25	Chips and Technologies	8.15	-0.66	-0.4
CRUS	91.13	10.50	Cirrus Logic	26.25	0.13	-0.3
CY	27.75	10.50	Cypress Semiconductor Corp	15.13	-0.88	5.5
INTC	78.38	28.75	Intel Corp	62.38	-0.00	-1.6
LSI	62.50	18.75	LSI Logic Corp	39.61	-4.38	-9.9
LSCC	63.00	15.81	Lattice Semiconductor	31.88	3.69	10.2
MCRL	31.38	11.75	Micrel Semiconductor Inc	11.00	1.00	-8.3
MU	94.75	19.58	Micron Technology	48.63	7.38	13.2
MOT	82.50	51.38	Motorola Inc	88.73	2.50	-4.0
NSM	33.81	16.38	National Semiconductor	20.00	-1.25	5.0
SERA	28.75	8.63	Sierra Semiconductor	16.25	0.75	-4.4
TXN	83.75	12.75	Texas Instruments	61.50	-7.50	12.1
VLSI	39.13	10.63	VLSI Technology	38.00	-1.00	-5.0
WWTK	6.88	1.78	Weitek	3.63	-0.50	12.1
WDC	22.13	13.13	Western Digital Corp	16.63	0.75	-4.9
XLNX	55.50	18.13	Xilinx	38.13	7.13	10.3
ZLG	54.13	29.38	Zilog Inc (L)	30.88	-0.25	-0.8

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Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
APCC	25.88	9.38	American Power Conversion (L)	9.56	-0.13	1.1
ADPT	47.75	19.88	Adaptec Inc	40.33	3.25	-7.9
BTEC	22.75	16.75	Banctec Inc	19.25	-0.88	-2.5
CBEX	33.13	3.38	Cambex Corp	8.13	1.50	30.7
CGN	6.63	1.38	Cognitronics Corp (H)	8.00	-0.19	-3.0
CNR	23.13	9.00	Conner Peripherals (H)	21.13	1.03	2.1
CREAF	14.38	5.88	Creative Technologies Inc	9.00	-0.63	-6.6
RACE	13.11	3.38	Data Race Inc	6.00	0.33	3.2
DTM	9.38	4.50	Dataram Corp	6.88	-0.03	-0.3
EMC	27.38	13.00	EMC Corp	16.75	0.00	0.0
EMLX	28.50	10.00	Emulex Corp	13.23	-0.38	-2.8
ESCC	23.00	11.25	Evans & Sutherland	22.50	0.17	0.6
EXBT	23.38	10.00	Exabyte	11.38	-0.88	-7.1
INSI	4.25	1.88	Intelligent Info. Systems	2.91	0.38	16.7
IOMG	40.63	2.00	Iomega Corp (H)	30.88	2.87	7.7
IPLSA	7.58	2.00	IPL Systems Inc.	3.26	0.00	0.0
KMAG	74.88	22.75	Komag Inc	47.00	7.00	18.0
MATR	7.25	3.88	Maxtor Corp	9.11	0.19	9.1
MLIS	11.50	3.00	Micropolis Corp	6.00	0.09	1.6
MTSI	47.50	13.50	Micro Touch Systems Inc	15.25	-0.75	-4.7
PEAK	31.75	14.00	Peak Technology Group	26.25	0.00	0.0
PNCL	29.50	8.75	Pinnacle Micro Inc. (H)	27.25	0.75	2.8
PTNX	38.75	16.00	Printronix Inc	38.50	0.13	0.7
AQM	9.88	1.25	QMS Inc (L)	4.00	0.83	18.5
QNTM	28.50	13.75	Quantum Corp	18.38	-0.50	2.6
RDUS	15.00	2.00	Radius Inc	2.61	-0.00	-3.3
SEG	54.00	22.58	Seagate Technology (H)	40.88	1.50	-6.3
STK	33.25	17.88	Storage Technology	36.38	2.00	7.6
TEK	81.88	31.38	Tektronix Inc.	54.88	1.50	-2.7
XRX	129.75	90.63	Xerox Corp (H)	129.00	0.63	0.5

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Exch	52-Week Range			Nov 22 3 pm	Wk Net Change	Wk Pct Change
AMSY	31.75	15.88	American Mgmt. Systems	29.63	1.00	-3.3
ANLY	33.00	18.00	Analysts Int'l	29.50	-0.50	1.7
AUD	78.50	52.50	Auto Data Processing (H)	76.13	-0.75	1.0
CATP	81.00	16.75	Cambridge Tech. Partners	53.23	-0.25	-0.5
CEN	67.50	73.50	Ceridian Corp	42.38	1.38	3.6
CDO	32.88	20.00	Comdisco Inc. (H)	32.44	-0.19	-0.6
CHRZ	32.13	8.88	Computer Horizons	30.38	1.75	6.3
CSC	78.50	45.00	Computer Sciences (H)	80.88	4.50	5.4
TSK	19.50	7.50	Computer Task Group	18.00	-0.25	-1.3
CPU	44.38	13.75	CompUSA Inc	37.13	0.75	2.3
CDAT	16.25	5.38	Control Data Systems Inc	11.00	-0.88	-5.5
EGGS	14.25	6.63	Egghead Discount Software	7.13	-0.13	1.7
GME	51.50	35.38	General Motors E (EDS) (H)	49.63	1.68	-3.3
INAC	15.25	6.88	Inacom Corp	10.25	-0.93	5.7
INEL	14.63	7.25	Intelligent Electronics	7.31	-0.38	-4.9
MSEL	8.38	3.88	Merisel	4.00	-0.11	-2.6
MICA	15.00	8.13	Microage Inc	8.50	-0.13	3.4
PAYX	47.00	23.25	Paychex	42.63	1.13	-2.6
PMS	54.25	37.75	Policy Management Sys	44.25	-0.75	3.7
REY	38.75	22.23	Reynolds and Reynolds (H)	37.50	1.38	-3.5
SEIC	24.50	16.75	SEI Corp	21.13	0.38	1.7
SMED	65.50	29.25	Shared Medical Systems	42.25	3.75	5.1
SHOF	13.13	4.00	SHL Systemhouse	12.63	0.00	0.0
SSPE	26.50	14.00	Software Spectrum Inc.	19.23	-0.50	2.5
SNDT	31.75	17.75	Sungard Data Systems	29.75	-0.13	-0.4

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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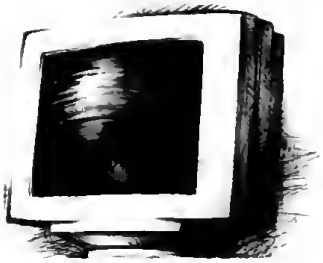

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Microsoft

CONTINUED FROM PAGE 1

er 2.1t will incorporate long-awaited, integrated direct TCP/IP support.

Proginet Corp. in Garden City, N.Y., a Microsoft third-party developer, this week will deliver an enhanced version of its Fusion software (see story below). Fusion gives customers expanded PC-to-IBM host remote access and redundancy.

Elizabeth Rainge, an analyst at International Data Corp. in Framingham, Mass., said Microsoft must make these types of moves to close the gap between its SNA Server and market leader IBM's NetWare for SAA software, which IBM recently purchased from Novell, Inc.

"NetWare for SAA is entrenched. It was crucial [that] Microsoft improve its TCP/IP connectivity to SNA environments since TCP/IP is *the* wide-area protocol of choice," Rainge said. "SNA Server is a strong product. It has good third-party support, SNA client emulators, redundancy and hot backup facilities."

Positive reaction

Users briefed on SNA Server's fortified TCP/IP support were glad to hear about it.

"The TCP/IP direct support is a godsend," said a network administrator at a large insurance company in New York, who requested anonymity. "Our corporate backbone is pure TCP/IP. This will let us consolidate all our corporate traffic onto TCP/IP and eliminate the nightmare of having to build and configure duplicate SNA and TCP/IP protocol stacks in our routers.

"It will save us lots of management manpower hours and protocol overhead," he said.

Suomalainen said the ability to deploy TCP/IP as the sole WAN backbone protocol gives users the best of both worlds.

"Customers can run SNA Server in their branch offices and manage SNA protocols and applications locally," he said. "But utilizing TCP/IP as the backbone protocol gives them faster response time for accessing corporate host-based applications."

Other new features in the Service Pack for SNA Server 2.1t include the following:

- Support for Escon channel interfaces, the newer fiber-optic-based channel interface for IBM mainframes
- Hot fixes for minor bugs such as Named Pipes, an older transport protocol that had problems connecting from Windows 95 clients.
- Availability of a Windows 95 client on CD-ROM
- Support for a wider range of device drivers, including the latest DigiBoard, Bus-Tech and Polaris drivers.

Another SNA Server user, Jim Snively, a systems consultant at Sun Co. in Philadelphia, welcomed the enhancements. "The availability of these features can help compress our network management chores," he said.

The SNA Server Service pack with direct TCP/IP support will be available free as a software download in the next two months, Suomalainen said.

Microsoft backs up to 'net ramp

By Stuart J. Johnston

Seeking to counter the prevailing sentiment that Microsoft Corp. had been blindsided by the Internet, Chairman Bill Gates has spent the past month using a number of venues — among them Comdex/Fall '95 — to outline a broad vision for Internet-enabled Office productivity applications.

Meanwhile, Microsoft is scrambling to convince users that it is serious about the Internet in other areas as well. For example, the company finished beta-testing its Internet Explorer Version 2.0, which will be available free this week on its Internet home page.

Microsoft also recently recast its pitch for The Microsoft Network (MSN) to reflect an enhanced awareness of the Internet's importance. The firm now emphasizes that MSN is a location for users to visit on the Internet as well as an on-ramp to the 'net for MSN subscribers.

MSN has just passed the 500,000-user mark, and Microsoft said it will no longer limit the number of subscribers as was previously announced.

While some users said they liked what they heard, not all were enthralled with the idea of Internet-enabled applications.

"I'm a bit skeptical because, outside of the computer industry, there aren't a lot of people using the Internet for business," said Brian Moore, assistant city manager for the city of San Carlos, Calif.

In his Comdex keynote, Gates outlined three broad but closely related trends the company's productivity applications will adopt during the next two or three major releases of Office — which will occur in the next five or six years.

These trends include the following:

- A stronger document-centric approach that lets users work on documents without concern for what application they are using and lets them choose whatever tools are most appropriate.
- An emphasis on so-called "intelligent agents" that will help locate and fetch information from the Internet for users.
- Adding Internet awareness to applications such as enabling several users to collaborate on a document in real time over the Internet.

Power play makes users uncomfortable

The squeeze is on.

While Lotus offers cut-rate pricing and Novell seeks a buyer for its WordPerfect applications, suite market leader Microsoft is twisting some arms behind the scenes to get users to sign licensing and maintenance contracts or face sharply higher fees next year.

"We've got two choices: Either sign up for the Select 3.0 Maintenance Plus program by Jan. 1 or Microsoft will significantly increase the cost of acquiring concurrent-use licensing and maintenance rights for its applications software offerings," complained Gary Wilkerson, supervisor of end-user services at health care provider Kaiser Permanente. "We're being told that if we don't sign, our purchasing and maintenance costs will double."

The Select program covers volume licensing agreements; users can also purchase separate Select maintenance contracts that provide free upgrades. Microsoft said it modified Select 3.0 to give users better pricing and flexibility.

Users such as Dennis Sagstetter, supervisor of LAN support at the state of Minnesota Department of Revenue in St. Paul, worry that the pressure to purchase Select 3.0 Maintenance augurs a reversal and long-term trend for Microsoft.

"I'm very uncomfortable with the pricing directions I see from Microsoft. They're headed towards per-seat licensing rather than concurrent deals. That could quintuple my desktop application costs," he said.

—Laura DiDio

Fusion in a box

Microsoft's upcoming SNA Server Service Pack will be complemented by upgraded SNA software from Proginet Corp., due out this week.

The Fusion 2.3B upgrade of the third-party package provides users with full server redundancy and Integrated Services Digital Network (ISDN) support. It also contains remote polling and hot backup features.

The original Fusion software, Release 2.3, has been shipping since the summer. It acts as an adjunct to Microsoft's SNA Server offering, said Joe Mohen, chief technical officer at Uniondale, N.Y.-based Proginet.

The remote polling feature enables remote branch offices to use dial-up and ISDN wide-area links to poll central site mainframes from Windows NT servers and to check for any type of transmission from corporate IBM host mainframes such as electronic mail, faxes, reports and spreadsheets, Mohen said.

Fusion 2.3B pricing ranges from $2,500 to $4,500 for the NT version, depending on server configuration; the Windows 95 version is $250 per client.

—Laura DiDio

SmartSuite

CONTINUED FROM PAGE 1

suite," he noted.

And preventing WordPerfect users from resignedly walking into the arms of Microsoft [CW, Nov. 6] is critical for Lotus because of the significant overlap between the customer bases for WordPerfect's word processor and 1-2-3, said Chris LeTocq, an analyst at SoftTracks Software Research in Los Altos, Calif.

As a result, LeTocq said, Lotus should be willing to wheel and deal in corporate accounts "because they can't afford to lose the 1-2-3 base" to Microsoft.

Tarter said he expects most WordPerfect users to sit tight until current owner Novell, Inc. finds a buyer for that suite.

Several users contacted last week agreed.

"We're not interested. The status quo isn't bad by comparison to the dollars and manpower headaches of switching desktop suites," said Gary Wilkerson, a senior planning analyst at Kaiser Permanente Health Plan, Inc. in Atlanta.

Big money

The health care provider has close to 10,000 WordPerfect users nationwide. Wilkerson estimated that the cost of migrating even 1,500 of them to SmartSuite would be a prohibitive "$5 million to $7 million, including all the associated training costs. We owe it to ourselves to preserve our investment in the WordPerfect suite until we know exactly what's going to happen after the sale," he said.

Dean Johnson, information delivery manager at auto parts manufacturer Freudenberg-NOK General Partnership in Bristol, N.H., agreed. "We're going to hunker down and wait," he said. "For the large number of copies we own, it is a huge process to trade them in, and we are not ready to do it."

One user, John Gusstrom, manager of personal productivity at New York State Electric & Gas Corp. in Binghamton, N.Y., said he plans to upgrade his 2,500 WordPerfect users to SmartSuite. "We're already SmartSuite customers, so it won't cost us anything to switch," he said.

Senior writer Tim Ouellette contributed to this report.

New world demands new skills

Charles Babcock

Are you tired of struggling to keep end users satisfied? Does the term "dumb terminal" have a nostalgic ring to you? Does the term "client/server computing" sound like a cloak for all the things that can go wrong between the client and server?

These sentiments seem to be catching on among the people who might be able to do something about them. The three keynote speakers at Comdex/Fall '95 — IBM's Lou Gerstner, Microsoft's Bill Gates and Novell's Bob Frankenberg — emphasized the primacy of the network and how it is essential for the technologies they produce to share a common network.

Gerstner spoke of the "PC-centric, piece-part phase of computing" as if he were talking about a bygone era, even though another 50 million PCs will ship this year. Comdex illustrates how the industry has changed from a few vertically integrated companies such as IBM to thousands of companies, each producing different parts of a system that often is assembled by someone else. It seemed as if most, if not all, of the industry's 60,000 vendors had flocked to Las Vegas to show their wares.

Gerstner acknowledged that democratizing the PC ended the mainframe era (although mainframe sales remain brisk, thank you). Users have pushed beyond the centralized computing model to implement client/server, but client/server is less a concrete model than a transition phase and not an entirely enjoyable one.

Client/server, the three speakers seemed to agree, will be supplanted by an age of network-centric computing. If you fail to make the network the computer in your organization, your workers will be left to labor fruitlessly alone. They won't be able to reach the co-workers, teamwork and knowledge they need to be competitive.

"The skills and technologies of the PC-centric, piece-part phase are not the important assets needed in network-centric computing," Gerstner warned. IS managers could heed that as a warning. IS managers for 15 years have groomed PC users and managers with skills aimed at opening metal cases, plugging in modules or cards or unwrapping shrink-wrapped boxes. The dawn of network-centric computing poses some risks. New skills — systems integration, network management, remote systems management — must be cultivated.

Gerstner is right. This could be the eve of a brave new era.

You don't need to go buy an application at a superstore if you can download it from the Internet. You don't need to upgrade your processor every nine months if you are attached to surplus power on the LAN. You don't need to know which operating system you are using if the multiplatform, heterogeneous network makes it irrelevant. You have the network's resources available to you, whether you view them through Microsoft's Windows 95, the Open Software Foundation's Motif, Macintosh or OS/2.

The 'net is our clearest example of what network-centric computing will look like, but it is clearly a first, not the last, word. To participate in network-centric computing, vendors and users will have to become better acquainted with standards and open computing. Instead of competing fiercely to establish a standard, vendors must agree on standards and compete on the value they can add to it.

Even here, Gerstner seemed to think the IBM experience offered a special perspective: "In the long run, closed, proprietary architectures are a losing strategy. I suspect you never thought you would hear that from IBM. But having had a near-death experience, we know what we're talking about," he said.

IBM and presumably some of those other 60,000 vendors aren't going to concentrate on building the dominant operating system, database or suite.

Instead, they're going to cooperate on establishing a high-speed, broad bandwidth network on which many technologies interoperate. They are going to follow standards that will let a customer plug in any product and have it work.

And they're going to concentrate on making this network easy to manage, easy for end users to navigate and easy to maintain remotely. Until now, there has been great resistance to letting go of proprietary ownership and creating a more shared computing environment. Gerstner is right. This could be the eve of a new era.

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Inside Lines

Attachmate eyeing 'net move

Having recently signed a letter of intent to acquire The Wollongong Group, Attachmate will on Dec. 11 detail its strategy for cashing in on the popularity of the Internet, according to an internal document obtained by *Computerworld*. Although plans aren't yet final, Attachmate, which provides users access to host-based information, will leverage The Wollongong Group's Emissary software suite. Both companies declined to comment last week.

Netscape to unveil new server

Netscape will introduce its Netscape Mail Server today, an open client/server messaging system priced at $495. Netscape will hawk the server's capability to enable corporate users to exchange information easily across their enterprise networks via the 'net. The product will integrate with the Netscape Navigator client software to enable mail reading, posting and administration from anywhere on a network.

Patching up CC:Mail

Lotus will announce next week that, pending release of its client/server version of CC:Mail, it will provide some added functionality to Notes Version 4.0. After this version of Notes ships next month, Lotus will make available some patches that support CC:Mail Message Transfer Agents. The company also will announce in mid-1996 that it will support Java, Sun Microsystems' object-oriented application development language for the Internet.

IBM buying Novell? Not quite.

Scratch those rumors of IBM buying Novell and its core NetWare business any time soon. IBM insiders told *Computerworld* that while the issue has been the subject of "intense debate" on several occasions recently, "Novell's current market cap of about $10 billion puts them out of our price range for now." The IBM insiders said they aren't, however, ruling out the possibility of making a bid for Novell's applications business — the former WordPerfect — which is for sale.

The 5th Wave by Rich Tennant

"Well, the first day wasn't bad—I lost the Finder, copied a file into the 'Trash' and sat on my mouse."

Visions of firewalls

Demand for Internet access systems is so high that communications server vendor CommVision is adapting one of its basic models for introduction in January. The Mountain View, Calif., company plans to combine server software — E-mail, Post Office Protocol, Web and Internet — with a firewall and eventually turn the system into a remote-node access point on corporate networks.

Stored and static

Watch for StarWare in Berkeley, Calif., to announce Version 2.0 of its $199 StarSQL Open Database Connectivity driver on Jan. 1. The company said it supports stored procedures and static SQL for quicker, more secure access to mainframe-based relational data from ODBC-compliant Windows applications.

Stop the presses: Big Blue is up for sale. No, no, not IBM. Sorry if we made you spill coffee all over yourself. Actually, it's the term "Big Blue" — long IBM's unofficial nickname — that is on the block. It seems IBM never bothered to trademark Big Blue, and now the federal government has awarded the rights to Big Blue Products, a small PC reseller in Huntington, N.Y. The reseller hopes to sell or license Big Blue to other vendors who might want to use it in marketing against IBM. Send along any new nicknames for IBM to Computerworld *by calling our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474. News editor Maryfran Johnson can be reached by phone at (508) 820-8179 or via the Internet at maryfran_johnson@cw.com.*

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